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CIVILIAN FOOD PROGRAM FOR 1945

The civilian food program for 1945 represents the civilian food requirements and requested allocations for the year beginning January 1, 1945, which have been submitted to Requirements and Allocations Control Branch.

The data for requirements and requested allocations are presented separately for specific food groups. However, taken as a whole, they constitute an integrated civilian food program. Each individual food requirement bears an essential relation to the total food program.

The program has been directed toward the following objectives:

1. To assure a sufficient supply of nutrients to maintain the civilian population at a high level of health and productive efficiency
2. To provide a varied and palatable diet within the framework of existing consumption habits
3. To meet in full the demand for foods insofar as this can be done without interfering with the quantities needed for direct and indirect military purposes
4. To provide various types and groups of foods in such quantities that reasonably equitable distribution of the foods which are most important from the standpoint of nutrition and dietary habits can be obtained

Basic Assumptions

In determining civilian requirements for the year 1945, it has been necessary to make certain basic assumptions regarding continuation of the war, the level of national income, and the extent of noncivilian requirements. These assumptions may be summarized as follows:

1. Conclusion of the war in Europe during the course of the year but continuation of the war in the Pacific throughout the year
2. Continuation of military food requirements throughout 1945 at close to 1944 levels. This will vary somewhat by commodities but appears to be sound as a generalization. Beyond June 30, 1945, lend-lease requirements will be diminished, but they will continue at a fairly high level for animal proteins. In general, relief feeding needs after June 30, 1945, will be supplied from military and other Government stocks available at that time

3. A national income of approximately 140 billion dollars. This is based on the expectation of a reduction in overtime wages and employment during the latter part of the year, resulting from cut-backs in Government expenditures for military purposes
4. Partial demobilization of the military forces following the close of the war in Europe. The resultant estimated numbers of persons eating out of civilian supplies a/, used as the basis in calculating civilian requirements, are as follows:

<u>1945</u>	<u>Thousands</u>
January-March quarter	129,329
April-June quarter	129,581
July-September quarter	130,118
October-December quarter	130,924
Average for year	129,988

5. Rationing controls will be eliminated as rapidly as the available supplies will permit. The speed with which these controls can be eliminated will depend for the most part upon the extent of military and lend-lease requirements during the year

Method of Calculation of Requirements

The 1945 food program has been shown as consisting of two phases: for the first half, a continuation of the wartime consumption pattern; for the second half, a transition back to the more normal pattern of civilian consumption. Although it is impossible to predict the course of the war, it seems desirable at this time to indicate the change in the food program that should be promoted after the war in Europe is over.

The requirements for the first half of the year take into consideration the noncivilian needs and provide a food program based on the supplies that are likely to be available for civilians. The requirements for the last half of the year are an indication of the supplies needed to get back to the more normal pattern of consumption without regard to the amounts that may be needed to supply noncivilian requirements. The increase in production or the adjustment necessary in noncivilian requirements that would be necessary to provide the civilian supplies has been indicated in the discussion of each of the several commodities. It is the intention to revise these requirements when the next food program is presented in light of the probable situation as it appears at that time.

a/ Includes an adjustment for estimated numbers of military personnel drawing upon civilian food supplies, as, for example, soldiers on furlough.

For each of the food groups and for the more important foods within these groups, the basis for the requirements calculations has been indicated. The relative importance of foods from the standpoint of food habits and nutrition has been shown; historical consumption figures and estimates of demand for the coming year have been presented; and the problems of distribution have been discussed. These considerations have provided the basis for the requirements calculations.

The estimates of demand in 1945 are based upon the assumption of national income and size of the civilian population indicated above and contemplate a level of prices roughly equivalent to those in 1943. The demand estimates are based in large part upon information obtained from the Bureau of Agricultural Economics, and the historical consumption figures are from that source.

The determination of requirements for the first half of the year was based on the following considerations. For highly nutritious, efficiently produced and distributed foods that are important on the basis of consumption habits, the requirements have been fixed, wherever feasible in the light of the prospective supply situation, at the level of demand. For more luxurious foods that are important nutritionally and in dietary habits, the requirements contemplate the distribution of a short supply by rationing or other distribution controls wherever it appears that such controls will be necessary. For others of these foods where it appears that rationing may not be necessary, requirements have been fixed at the amount it is estimated will be required to maintain reasonably equitable distribution without rationing. For foods that are relatively unimportant nutritionally and in consumption habits, no fixed requirements have been submitted but an allocation of the residual supply has been requested.

The determination of the requirements for the second half of the year are in general based on the demand that would be expected with the national income and population assumed and a normal pattern of consumption. For some commodities where it is plainly unlikely that supplies would be sufficient to provide for full demand, the requirements have gone as far towards that goal as seemed likely to be attained and in most instances are sufficient to provide reasonably equitable distribution without controls over their distribution.

It should be noted that the estimates of demand and the requirements or requested allocations include only the supplies for home consumption and those which can be moved through normal commercial channels at prices consistent with responsibilities of the War Food Administration under price support legislation.

Quantitative Adequacy of Requirements

The total amounts of various kinds of food covered by the requirements are given in table 1. These amounts, in most instances, are well within the supply estimates for the year 1945. For some foods, however, the required amounts could not be supplied from the presently contemplated domestic production without affecting the allocations of other claimants. Table 2 compares the 1945 civilian food requirements with consumption of previous periods in terms of per capita weights. Reflecting the desire to indicate the changes in the food program that should be promoted following the close of hostilities in Europe, it will be noted that the 1945 requirements call for the beginning of a general shift away from the inexpensive, efficiently produced staples upon which emphasis has been placed during the war period toward a return to what may be considered the more normal pattern of consumption prior to the war. It recognizes also a resumption of trends in consumption which were developing prior to the war.

Nutritive Evaluation

In terms of nutritional adequacy the 1945 requirements represent some progress over 1944 particularly in calcium and riboflavin, due to the higher requirements for fluid milk and other sources of nonfat milk solids. In other nutrients except niacin they are strikingly similar to the 1944 consumption level which was better in several respects than any previous year. However, the upward trend in niacin will be reversed. These requirements are, therefore, high enough except in niacin to provide an average diet that meets the National Research Council's recommended dietary allowances unless cooking losses or waste of edible food are higher than are presupposed in the estimates used. For the population as a whole, there would be no actual deficiency if all persons obtained as good a diet as the per capita level.

Because the requirements are limited by expected demand and are below it in several important groups, they necessarily do not contain a sufficient margin of the various food groups and the essential nutrients to allow for maldistribution. In terms of probable consumption there would continue to be in 1945 very substantial sections of the population at the lower income levels who would be unable to obtain diets that measure up to current yardsticks of good nutrition. Roughly, one-fourth of the families in the population is estimated to be, in 1944, in income brackets that are characterized by inadequate food consumption patterns, and a similar proportion in 1945 is a reasonable assumption.

Therefore, recommended food allowances for 1945 have been developed and are presented for comparison. These food allowances correspond with the 1945 requirements plus added amounts of certain food groups to satisfy the demand of families in all income brackets and also to improve the diets of low income families.

Table 1.—Aggregate Civilian Requirements for 1945, by Major Food Groups a/

Commodity	Unit	Total Requirement
Meat (dressed weight)		
Beef and veal	Mil. lbs.	8,355.7
Lamb and mutton	" "	819.0
Pork (excluding lard)	" "	8,628.0
Total meat	" "	17,802.7
Fish (edible weight)		
Fresh and frozen	" "	640.0
Cured	" "	140.0
Canned (processed weight)	" "	450.0
Total fish	" "	1,230.0
Poultry products		
Eggs (farm weight)	Mil. doz.	3,629.0
Chickens (dressed weight)	Mil. lbs.	2,795.0
Turkeys " "	" "	455.0
Dairy products (processed weight)		
Milk, fresh fluid	" "	44,196.0
Cream (20 percent fat)	" "	1,807.0
Cheese	" "	819.0
Condensed and evaporated milk	" "	2,279.0
Condensed skim milk	" "	550.0
Ice cream - milk	" "	1,289.0
" " - cream	" "	314.0
Malted milk	" "	31.0
Nonfat dry milk solids	" "	408.0
Dried whole milk	" "	40.6
Cottage and other skim milk cheese	" "	237.0
Buttermilk, chocolate drink, and skim milk	" "	7,508.0
Fats & oils (fat content, except butter)		
Butter, farm and factory	" "	1,832.0
Lard	" "	1,754.0
Shortening and other oils	" "	2,133.0
Margarine	" "	378.0
Total fats and oils	" "	6,097.0

(Continued)

Table 1.--Aggregate Civilian Requirements for 1945, by Major Food Groups a/ (Continued)

	Commodity	Unit	Total Requirement
Fruits			
Fresh (farm weight)			
Citrus	Mil.	lbs.	7,656.3
Apples	"	"	3,964.6
Other fruit	"	"	6,538.4
Canned (processed weight)	Mil.	cases No. 2½'s	30.5
Canned juices (processed weight)	"	" " 2's	35.1
Frozen (processed weight)	Mil.	lbs.	240.0
Dried (packed processed basis)	Thous.	tons	330.0
Vegetables			
Fresh (farm weight) b/	"	"	15,511.0
Canned (processed weight) c/	Mil.	cases No. 2's	154.0
Frozen " "	Mil.	lbs.	175.0
Dehydrated (" " . ")	"	"	7.0
White potatoes (farm weight)	Mil.	bu.	261.7
Sweetpotatoes " "	"	"	50.0
Dry beans (cleaned)	Thous.	bags (100 lbs.)	12,210.0
Dry peas " "	"	"	1,225.0
Tree nuts (shelled)	Mil.	lbs.	168.0
Peanuts (farmers' stock)	"	"	1,100.0
Sugars			
Cane and beet	Thous.	tons, raw	5,794.0
Other sugars & syrups (proc.) d/	Mil.	lbs.	3,043.0
Preserves (processed)	"	"	500.0
Grains (farm weight)			
Wheat e/	Mil.	bu.	484.0
Rye -	"	"	11.4
Rice (milled) f/	Mil.	lbs.	806.0
Corn e/	Mil.	bu.	160.8
Oats	"	"	46.3
Barley e/	"	"	6.2
Soybeans for flour	"	"	4.8
Buckwheat	"	"	1.0
Grain sorghum	"	"	3.5

(Continued)

Table 1.--Aggregate Civilian Requirements for 1945, by Major Food Groups a/ (Continued)

Commodity	Unit	Total Requirement
Miscellaneous		
Dehydrated soups. (processed weight)	Mil. lbs.	50.0
Coffee, green	" "	2,100.0
Tea, black.	" "	86.4
Cocoa beans	" "	553.0
Spices <u>g/</u>	" "	35.7
Yeast		
Active	" "	220.0
Nutritional	" "	2.0
Pectin	" "	3.7
Vinegar	Mil. gal.	160.2

- a/ Calendar years except for citrus fruit which is crop year beginning in year shown; canned fruits, canned vegetables, frozen fruits, and dried fruits which are on a pack year basis; dry beans, dry peas, nuts, and peanuts which are on a crop year basis; and potatoes and sweetpotatoes which are on a July-June fiscal year basis.
- b/ Includes estimated home and market garden production, as well as reported commercial production.
- c/ Includes baby foods; excludes baked beans, soups, and pickles.
- d/ Includes corn and maple sugar, corn and maple syrup, honey, sugar cane syrup, sorgo syrup, cane refiners' syrup, and edible molasses.
- e/ Does not include grain used in fermented malt beverages.
- f/ Includes milled rice (second heads and screenings) used in brewing as the exact quantity is not known. This rice has always been included in data on rice consumption.
- g/ Includes pepper (black and white), pimiento (allspice), cinnamon and cassia, cloves, ginger, mace, and nutmeg.

Table 2.--Estimated Per Capita Civilian Consumption, by Major Food Groups,
1932, 1935-39 Average, 1941 through 1944, and 1945 Require-
ments a/

Commodity	1932	1935-39	1941	1942	1943	1944	Requirements
						b/	1945
	Pounds						
Meat (dressed weight)							
Beef and veal	53.0	62.8	68.1	69.2	57.7	63.0	64.3
Lamb & mutton	7.0	6.7	6.8	7.2	6.3	6.0	6.3
Pork(excluding lard)	70.3	56.1	66.5	61.5	72.6	74.0	66.3
Total meat	130.3	125.6	141.4	137.9	136.6	143.0	136.9
Fish (edible weight)							
Fresh & frozen	c/	4.5	5.0	4.0	4.3	4.9	4.9
Cured	c/	1.1	.9	1.0	.8	1.0	1.1
Canned(proc. wt.)	c/	5.0	4.7	3.3	2.6	2.4	3.6
Total fish	c/	10.6	10.6	8.3	7.7	8.3	9.6
Poultry products							
Eggs(farm weight)	38.9	37.2	38.9	38.9	42.9	43.4	41.9
Chickens(dressed wt.)	19.7	17.9	19.4	21.5	28.1	22.7	21.5
Turkeys " "	2.1	2.6	3.6	3.7	3.2	3.2	3.5
Dairy products(proc.wt.)							
Milk, fresh fluid	280.8	272.1	280.9	296.1	330.8	345.2	340.0
Cream d/	11.1	10.9	11.2	12.1	14.5	13.1	13.9
Cheese	4.4	5.5	6.0	6.3	5.1	5.1	6.3
Condensed & evaporated milk	13.9	16.7	18.2	18.9	18.9	15.1	17.5
Condensed skim milk	2.1	2.8	3.8	4.2	4.8	4.1	4.2
Ice cream-whole milk	3.7	5.9	8.3	9.5	9.3	10.8	9.9
" " -cream	1.1	1.8	2.5	2.9	1.5	1.8	2.4
Malted milk	.1	.1	.1	.2	.3	.2	.2
Nonfat dry milk solids	1.0	e/ 1.9	2.4	2.3	1.8	2.1	3.1
Dried whole milk	.1	.1	.2	.2	.4	.3	.3
Cottage & other skim milk cheese	1.3	1.5	1.9	2.0	2.0	1.7	1.8
Buttermilk, choc.drink, & skim milk	52.6	53.9	56.2	57.7	58.8	57.7	57.8
Fats and Oils (fat content, except butter)							
Butter, farm & factory	18.1	16.7	15.9	15.6	11.9	12.0	14.1
Lard	14.3	11.0	14.2	13.6	14.5	14.0	13.5
Shortening & other oils	12.1	18.0	18.7	17.0	16.0	15.2	16.4
Margarine	1.3	2.3	2.2	2.2	3.2	3.2	2.9
Total fats & oils	45.8	48.0	51.0	48.4	45.6	44.4	46.9

(Continued)

Table 2.--Estimated Per Capita Civilian Consumption, by Major Food Groups, 1932, 1935-39 Average, 1941 through 1944, and 1945 Requirements a/ (Continued)

Commodity	: 1932:	: 1935-39:	: 1941	: 1942	: 1943	: 1944	: Require- ments 1945
	: :	: :	: :	: :	: :	: b/	: :
	Pounds						
Fruits							
Fresh (farm weight)							
Citrus	36.5	48.8	57.0	59.8	67.7	62.4	58.9
Apples	c/	30.2	30.9	26.7	25.2	25.9	30.5
Other fruit f/	69.7	75.5	75.9	59.4	47.9	70.7	67.8
Canned (proc.wt.)	10.3	14.9	18.7	14.2	9.1	8.7	10.1
Canned juices " "	c/	6.0	6.8	5.8	7.9	6.5	7.7
Frozen (proc.wt.)	.6	1.0	1.5	1.8	1.7	1.9	1.8
Dried (packed proc- essed basis)	5.5	5.7	4.0	4.5	6.2	5.2	5.0
Vegetables							
Fresh (farm wt.) g/	204.2	211.9	218.8	241.8	240.0	249.9	238.7
Canned (processed weight) h/	c/	30.6	37.5	37.0	36.1	33.2	35.3
Frozen	c/	.6	.8	1.1	1.2	1.4	1.3
White potatoes (farm weight)	141.8	130.6	124.1	118.3	132.4	111.7	120.0
Sweetpotatoes (farm weight)	31.4	23.3	20.6	19.6	22.7	22.3	21.0
Dry beans (cleaned)	7.4	8.8	8.7	9.1	8.9	8.3	9.4
Dry peas "	c/	.5	.4	1.2	1.2	1.2	.9
Tree nuts (shelled)	1.1	1.3	1.2	.8	1.1	1.2	1.3
Peanuts (farmers' stock basis)	5.9	6.4	6.6	8.8	8.5	8.5	8.5
Sugar							
Cane & beet (refined basis)	94.7	96.5	103.6	86.2	82.1	88.1	83.3
Other sugars & syrups (proc.) i/	15.6	16.7	17.0	23.6	22.9	22.5	23.5
Preserves "	c/	c/	3.0	2.9	4.2	4.1	3.8
Grains (farm weight)							
Wheat j/	225.1	221.4	217.1	219.5	225.9	226.4	223.4
Rye	4.0	3.2	4.2	4.8	4.9	5.0	4.9
Rice (milled) k/	6.0	5.8	5.6	6.5	5.8	6.1	6.2
Corn j/	61.5	56.3	61.9	72.0	67.4	66.3	69.3
Oats l/	11.5	9.5	9.7	11.0	11.6	11.4	11.4
Barley j/	5.3	1.7	1.8	1.9	2.3	2.3	2.3
Soybeans for flour	m/	.2	.4	.5	1.2	1.3	2.2
Buckwheat	.6	.4	.3	.3	.3	.5	.4
Grain sorghum	c/	c/	c/	c/	c/	1.5	1.4

(Continued)

Table 2.--Estimated Per Capita Civilian Consumption, by Major Food Groups, 1932, 1935-39 Average, 1941 through 1944, and 1945 Requirements a/ (Continued)

Commodity	1932	1935-39	1941	1942	1943	1944	Requirements 1945
Miscellaneous							
Coffee, green	11.9	11.0	15.5	13.4	13.1	16.5	16.2
Tea	.8	.7	.8	.5	.5	.6	.7
Cocoa beans	3.2	4.4	4.8	3.8	2.9	3.4	4.3

a/ Calendar years except for citrus fruit which is crop year beginning in year shown; canned fruits, canned vegetables, frozen fruits, and dried fruits which are on a pack year basis; dry beans, dry peas, nuts, and peanuts, which are on a crop year basis; and potatoes and sweetpotatoes which are on a July-June fiscal year basis.

b/ Preliminary.

c/ Not available.

d/ On basis of 25 percent cream from 1932 through 1942 and 20 percent cream for 1943 and 1944.

e/ Estimated.

f/ Includes melons.

g/ Includes estimated home and market garden production, as well as reported commercial production.

h/ Includes baby food; excludes baked beans, soups, and pickles.

i/ Includes corn and maple sugar, corn and maple syrup, honey, sugar, cane syrup, sorgho syrup, cane refiners' syrup, and edible molasses.

j/ Does not include grain used in fermented malt beverages.

k/ Includes heads, second heads, and screenings used in fermented malt beverages. Data for 1932 through 1943 on marketing year basis rather than calendar year.

l/ Calculated on the basis of field run oats, 13.2 pounds of oatmeal per bushel of oats.

m/ Practically none.

Problems of Distribution

Wartime shortages of some foods for civilian consumption will continue in 1945. Among the more important commodities which will continue to be in short supply in relation to demand will be meat, canned fish, fluid cream and manufactured dairy products, sugar, and canned fruits. Poultry, which was somewhat short in the latter part of 1944, will also continue to be short during early 1945 in some areas. For the first part of 1945, potatoes from the 1944 late crop may become short before the early crop is on the market in any volume. Red kidney beans and some other classes of colored dry beans, except pintos, will not be available in as large supplies as would be consumed.

On the other hand, supplies larger than needed to meet consumer demands may develop. There are apt to be local surpluses of some fresh vegetables as in the past. Fluid milk in certain markets may be in surplus above the facilities available for economical diversion to manufactured products. Seasonally large supplies of eggs in the spring will tax marketing and storage facilities. These commodities in their natural form are perishable and, if not consumed within a reasonably short time, must be stored, or preserved. However, difficulties in handling them are apt to result, because facilities for processing and storing for future use may not be sufficient for the additional production. Early potatoes and some vegetables also are either not suitable for processing or in processed form have only a limited market.

Shortages and surpluses will vary from place to place, as well as from time to time. Even in normal times the flow of food from producer through processing and distributive channels to the consumer is not without problems. With wartime shortages of materials and facilities for handling food products and with restrictions on movement and prices, the uninterrupted flow of commodities to consumers is even more difficult.

Any prospective shortages in meat, dairy products, and other foods can be expected to be more acute in areas remote from production than in the producing areas. Among the reasons for this is the fact that under the higher costs and the handicaps of wartime business, the advantage of the nearby market to the producer is increased. Therefore, with a limited supply available, producers and distributors meet the demands of local markets before shipping to more distant points. Moreover, under the price restrictions, which are a necessary part of wartime distribution controls, adjustments in supply are not made as readily as in a free market.

MEATS

(Prepared by George A. Sallee and C. J. Otten)

Significance to the Food Supply

Meat is highly important in our dietary habits and is the food around which the principal family meat is usually planned. Its palatability makes it one of the most desirable and universally liked components of the diet, and it is commonly looked upon as the food most necessary for physical strength and vigor.

Historically, meat has contributed a significant fraction of the protein, fat, B vitamins, calories, and minerals in the American diet. During 1944 meat is estimated to have contributed about 21 percent of the thiamine and 31 percent of the niacin in the civilian diet. Meat also supplies very substantial amounts of riboflavin; and liver and kidneys are particularly rich in vitamin A.

These nutrients, however, can be obtained from other foods that are less expensive in terms of the agricultural resources required for their production and foods that can be produced in greater abundance. Consequently, during a wartime emergency consumption of meat can be reduced if the supply of these other foods is sufficient to provide the necessary protein, vitamins, and minerals. There are certain nutritional limitations, however, to the possibility of substituting other foods for meat. One of these is the desirability of supplying about one-third of the protein requirement in the form of animal protein. This limitation is not serious for any but the lowest income groups, since this amount of animal protein can be supplied by very small quantities of meat, if sufficient milk and eggs are available. The second limitation is that substitution is more difficult for persons doing heavy work. Because meat carries a substantial portion of fat, it supplies nutrients in relatively concentrated form, and when other foods are substituted greater quantities must be consumed. Heavy workers, therefore, may find it difficult to ingest the quantities of substitute foods that will be needed to supply the calories and other nutrients necessary to sustain themselves. Finally, civilians are accustomed to eating 135 to 140 pounds of meat (dressed weight) per capita annually. Because of the anticipated continuation of a high level of income and established food habits, it would be difficult to replace any large quantity of meat with other protein containing foods which are generally regarded by consumers as less palatable or desirable.

Consumption in Recent Years

The 1935-39 average annual civilian consumption of meat was 125.6 pounds per capita as shown in table 3. Production of meat in this period was considerably below average because of reduced livestock production accompanying two of the worst droughts in the history of this country. An all-time record low meat consumption of 116 pounds per capita was established in 1935. Production had only partly recovered by 1939, when average consumption was 134 pounds. By 1941, however, consumption had reached a level of slightly over 141 pounds per capita. In 1942 and 1943, because of large requirements for the armed forces and lend-lease, civilian consumption declined to approximately 137 pounds per capita. Record meat production in 1944 permitted consumption at the rate of approximately 143 pounds per capita.

Table 3.--MEATS: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	: 1932	: 1935-39	: 1941	: 1942	: 1943 a/	: 1944 a/
	: 1	: 2	: 3	: 4	: 5	: 6
----- Per capita (pounds) -----						
Beef	46.4	54.8	60.5	61.2	49.8	51.0
Veal	6.6	8.0	7.6	8.0	7.9	12.0
Lamb and mutton	7.0	6.7	6.8	7.2	6.3	6.0
Pork	70.3	56.1	66.5	61.5	72.6	74.0
Total	130.3	125.6	141.4	137.9	136.6	143.0
----- Aggregate (million pounds) -----						
Beef	5,830	7,111	8,024	8,104	6,456	6,561
Veal	822	1,038	1,003	1,054	1,017	1,568
Lamb and mutton	882	868	906	948	820	788
Pork	8,826	7,286	8,830	8,139	9,411	9,521
Total	16,360	16,303	18,763	18,245	17,704	18,438

a/ Preliminary.

Demand and Requirements for 1945

Meat is universally well liked but relatively expensive, and as a result per capita consumption of it increases rapidly with increasing income as shown in table 4. As a result of the anticipated high level of income in 1945 civilian demand for meat is estimated at approximately 155 pounds per capita. This is approximately 123 percent of average annual consumption in 1935-39 but only 108 percent of consumption in 1944. On the basis of past consumption it is estimated the total demand for meat includes approximately 66.2 pounds of beef, 8.8 pounds of veal, 7.0 pounds of lamb and mutton, and 73.0 pounds of pork.

Table 4.--MEATS: Civilian Per Capita Consumption in U. S. Urban Households, by Net Income Class, Spring 1942

Income per annum	: Pounds per capita per week, retail weight
All classes	2.33
\$0-499	1.61
\$500-999	1.81
\$1,000-1,499	1.96
\$1,500-1,999	2.10
\$2,000-2,999	2.52
\$3,000 or over	2.64

Source: Family Food Consumption in the United States. U.S.D.A. Misc. Pub. No. 550.

The civilian requirement for meat is intended to assure a minimum weekly household allowance of approximately 1.7 pounds per capita for the first half of the year and an allowance of approximately 1.75 pounds per capita, on a retail meat basis, for the second half of the year. This will provide a minimum amount of the basic item in the conventional family meal during the first 6 months and a slightly larger quantity for the remainder of the year. Some farm families do not produce meat for home consumption and others supplement home produced supplies with varying amounts purchased through commercial channels of distribution. It is estimated that purchases by these farm families on the average amount to approximately 40 percent of the basic weekly household allowance. To the basic household allowance must be added an allowance for use in restaurants and other institutions, which is estimated at 25 percent of the amount needed to meet the household requirement; special allowances for heavy workers including in-plant feeding; supplementary allowances for invalids and others who require special diets; and consumption of meat from farm slaughter.

In order to assure the availability of the household allowance to all individuals, it is necessary also to make allowance for poor distribution of farm and non-inspected slaughter. It is estimated that 80 percent of the meat from farm slaughter is either consumed on the farm or locally and, therefore, distribution of this meat is not subject to effective control. It also is estimated that as much as 20 percent of the meat produced in non-inspected wholesale and retail slaughtering establishments is not subject to effective control, and that this meat will be used locally in raising household, industrial, or institutional consumption above the level provided by the respective requirements. On the basis of these estimates the quantity of meat required for the first half, second half, and the calendar year is determined as shown in table 5.

Table 5.--MEATS: Distribution of Civilian Requirement
According to Use and Period, 1945

Use	Period		
	Jan.- June	July- Dec.	Entire year
	1	2	3
	Million pounds, dressed weight		
Distribution subject to control			
Household basic allowance	5,744	5,971	11,715
Institutional use	1,436	1,488	2,924
Special needs groups (supplementary allowance):			
Heavy workers	339	314	653
Patients (nonhospitalized)	47	44	91
Total	7,566	7,817	15,383
Distribution not subject to effective control	1,105	1,315	2,420
Total requirement	8,671	9,132	17,803

The estimated distribution of the aggregate requirement according to type of slaughter is shown in table 6.

Table 6.--MEATS: Distribution of Civilian Requirement, by Type of Slaughter, for 1945

Type of slaughter	: Subject	: Not sub-	:
	: to	: ject to	: Total
	: control	: control	:
	: 1	: 2	: 3
- Million pounds, dressed weight -			
Federally inspected	11,731	-	11,731
Non-inspected:			
Wholesale and retail	3,250	813	4,063
Farm	402	1,607	2,009
Total	15,383	2,420	17,803

Distribution of the civilian per capita and aggregate annual meat requirement by quarters is shown in table 7.

Canned meat: Canned meat makes an important contribution to the civilian food supply. It may be stored without refrigeration and is easily prepared for final consumption. Because of the ease with which it can be transported and stored it is particularly useful to those individuals who are forced to live a considerable distance from market or who have limited means for procuring and keeping fresh meats. Since canned meat is easily stored for considerable periods, its use provides a means of conserving some of the meat produced during periods of peak slaughter for use during the summer months when less fresh meat is available and the prevention of spoilage is more difficult. Moreover, it provides a means of utilizing meat trimmings, edible offals, and low-grade cuts for which, in their original form, there is limited demand.

The civilian requirement for canned meats for the calendar year 1945 is shown in table 8. Because of the anticipated shortage of cans and the large amount of canned meat needed for noncivilian use, these requirements are considerably less than civilians would like to buy. They are believed to be sufficient, however, to meet the most essential civilian needs.

Problems of Distribution

In light of the intensity of demand for meat and the existence of price controls, inequitable distribution of meat may be expected if consumers are permitted to compete freely for a quantity of meat materially less than 155 pounds per capita.

With a civilian supply equal to the requirement and a normal distribution of the various meats among the different cuts and grades, continuation of rationing of meats will be needed during the first 6 months but may be eliminated in the last part of the year. However, if the supply of meat

Table 7.--MEATS: Civilian Per Capita and Aggregate Annual Demand and Requirement for 1945, by Quarters

Item	Requirement					
	: Demand :	: Jan.-	: Apr.-	: July-	: Oct.-	
	: Total :	: Mar.	: June	: Sept.	: Dec.	
	: 1 :	: 2 :	: 3 :	: 4 :	: 5 :	: 6 :
- - - Per capita (pounds, dressed weight) - - -						
Total meats						
Federally inspected	90.2	21.4	21.7	22.9	24.2	
Other wholesale and retail	31.2	7.6	7.1	7.6	8.9	
Farm	15.5	5.3	3.9	2.3	4.0	
Total	155.0	136.9	34.3	32.7	32.8	37.1
Beef						
Federally inspected	37.2	8.6	9.1	9.7	9.8	
Other wholesale and retail	17.3	4.3	4.1	4.2	4.7	
Farm	2.0	.7	.5	.2	.6	
Total	66.2	56.5	13.6	13.7	14.1	15.1
Veal						
Federally inspected	2.7	.6	.7	.7	.7	
Other wholesale and retail	4.5	.9	1.0	1.3	1.3	
Farm	.6	.2	.1	.1	.2	
Total	3.8	7.8	1.7	1.8	2.1	2.2
Lamb and mutton						
Federally inspected	5.5	1.4	1.3	1.4	1.4	
Other wholesale and retail	.6	.1	.1	.2	.2	
Farm	.2	.1	a/	a/	.1	
Total	7.0	6.3	1.6	1.4	1.6	1.7
Pork						
Federally inspected	44.8	10.8	10.6	11.1	12.3	
Other wholesale and retail	8.8	2.3	1.9	1.9	2.7	
Farm	12.7	4.3	3.3	2.0	3.1	
Total	73.0	66.3	17.4	15.8	15.0	18.1

a/ Less than 0.05 pound.

(Continued)

Table 7.--MEATS: Civilian Per Capita and Aggregate Annual Demand and Requirement for 1945, by Quarters (Continued)

Item	Requirement					
	Demand					
		Jan.-	Apr.-	July-	Oct.-	
		Mar.	June	Sept.	Dec.	
	1	2	3	4	5	6
- - - Aggregate (million, pounds, dressed weight) - -						
Total meats						
Federally inspected	11,730.4	2,768.8	2,813.1	2,979.0	3,169.5	
Other wholesale and retail	4,063.0	986.0	920.0	988.0	1,169.0	
Farm	2,009.3	677.3	506.0	304.0	522.0	
Total	20,148.1	17,802.7	4,432.1	4,239.1	4,271.0	4,860.5
Beef						
Federally inspected	4,840.8	1,116.5	1,181.8	1,265.4	1,277.1	
Other wholesale and retail	2,246.0	550.0	528.0	546.0	622.0	
Farm	248.0	88.0	60.0	20.0	80.0	
Total	8,605.2	7,334.8	1,754.5	1,769.8	1,831.4	1,979.1
Veal						
Federally inspected	344.9	76.3	81.1	92.6	94.9	
Other wholesale and retail	599.0	120.0	136.0	175.0	168.0	
Farm	77.0	20.0	16.0	13.0	28.0	
Total	1,143.9	1,020.9	216.3	233.1	280.6	290.9
Lamb and mutton						
Federally inspected	724.0	181.7	170.6	183.7	188.0	
Other wholesale and retail	70.0	16.0	16.0	19.0	19.0	
Farm	25.0	8.0	4.0	4.0	9.0	
Total	909.9	819.0	205.7	190.6	206.7	216.0
Pork						
Federally inspected	5,820.7	1,394.3	1,379.6	1,437.3	1,609.5	
Other wholesale and retail	1,148.0	300.0	240.0	248.0	360.0	
Farm	1,659.3	561.3	426.0	267.0	405.0	
Total	9,489.1	8,628.0	2,255.6	2,045.6	1,952.3	2,374.5

Table 8.--CANNED MEAT: Civilian Aggregate Annual Requirement for 1945

Product	: Packed : in tin : 1	: Packed : in glass : 2	: Total : 3
- - - Thousand pounds, canned weight - - -			
Beef, dried	-	5,123	5,123
Beef, tongue	5,444	-	5,444
Brains	3,695	-	3,695
Chili con carne	17,249	10,945	28,194
Chopped luncheon meat	125,773	27,945	153,718
Corned beef hash	32,624	39,848	72,472
Hams, whole	87,975	-	87,975
Lamb, tongue	725	1,143	1,868
Meat loaf	5,748	-	5,748
Meat spread	7,204	14	7,218
Mince meat	-	9,633	9,633
Oxtail	-	416	416
Pigs' feet and cutlets	-	19,406	19,406
Pork sausage	15,856	-	15,856
Potted and deviled meat	77,401	-	77,401
Scrapple, Philadelphia	-	1,295	1,295
Sausage in oil	54	-	54
Sausage, Vienna	71,870	39	71,909
Tamales	-	1,913	1,913
Total	451,618	117,720	569,338

should fall materially below these requirements in the last part of the year, some form of rationing probably will be necessary in order to obtain satisfactory distribution of the available supply among civilian consumers. Moreover, if because of the nature of production or noncivilian takings, the civilian supply during the last part of the year, although equal to the requirement in total, should contain an abnormally small proportion of the better cuts and grades it probably would be necessary to ration these in order to secure equitable distribution of them. On the other hand, if larger quantities of meat become available, civilians probably would absorb 15 to 20 percent more in the first period and 10 percent more in the last period than the respective requirements without materially lowering retail prices. An even larger quantity would be taken with some lowering of retail prices.

FISH
(Prepared by Isabelle M. Kelley)

Significance to the Food Supply

The palatability of fish makes it one of the most desirable components of the diet. Fish, like poultry and meat, is a main-dish item in the usual family menu. For this reason, fish is a more acceptable meat substitute than dry beans and peas. Reductions in available supplies of the most desirable cuts of meat, together with high prices of poultry, have tended to increase the importance of fish to many families. Whereas fish is only a fair source of iron as compared with meat, it is an excellent source of protein of high biological value and of niacin. Fish, therefore, makes an important contribution to the nutritional adequacy of the civilian diet, especially in coastal areas where fish consumption is relatively large.

Consumption in Recent Years

Per capita consumption of fresh and frozen fish averaged 4.5 pounds annually during the 1935-39 period and rose to 5.0 pounds per capita in 1941, as is shown in table 9. During this period there was a definite upward trend in the consumption of frozen fish. During 1942 and 1943 civilian supplies of fresh and frozen fish were below the pre-war levels and below the level of estimated civilian demand. This reduction in supplies was due to the difficulties involved in offshore fishing, the conversion of fishing boats by the Navy, and to labor shortages. However, fishing conditions improved during 1944 and supplies were close to 1941 levels. Supplies of frozen fish were especially abundant in 1944, and steps were taken by WFA to promote increased civilian purchases late in the year. Consumption of cured fish has remained relatively stable at approximately 1 pound per capita. Imports of salted fish, such as cod, hake, pollack, during 1943 and 1944 have been below the 1942 level and supplies have been allocated among importers under WFO 72.

Table 9.--FISH: Civilian Per Capita Annual Consumption for Specified Periods

Item	: Apparent civilian consumption				
	: 1935-39	: 1941	: 1942	: 1943	: 1944
	: 1	: 2	: 3	: 4	: 5
	- - - - - Pounds per capita - - - - -				
Fresh and frozen <u>a/</u>	4.5	5.0	4.0	4.3	4.9
Cured <u>a/</u>	1.1	0.9	1.0	0.8	1.0
Canned <u>b/</u>	5.0	4.7	3.3	2.6	2.4
Total	10.6	10.6	8.3	7.7	8.3

a/ Edible weight basis.

b/ Processed weight. Estimates refer to pack year beginning in July of year shown.

During the war period, supplies of canned fish available for civilian use have been sharply lower than consumption in 1935-39. Lend-lease purchases of canned fish reduced civilian supplies below normal level in 1941 (table 10). Since our participation in the war, heavy military requirements, together with those of the lend-lease program, have meant a steady decline in civilian supplies. Early in 1943 rationing controls were established on canned fish to more equitably distribute the relatively small supply available to meet the heavy civilian demand. Civilians received approximately 332 million pounds of canned fish from the 1943 pack. Despite high ration points during most of the period, supplies of canned fish were almost completely exhausted by late spring. When rationing restrictions were temporarily removed from canned fish in May 1944, very little was available for civilian distribution.

Table 10.--FISH: Civilian Aggregate Annual Consumption for Specified Periods

Item	Apparent civilian consumption				
	1935-39	1941	1942	1943	1944
	1	2	3	4	5
	Million pounds				
Fresh and frozen <u>a/</u>	536	671	523	562	634
Cured <u>a/</u>	141	119	125	99	130
Canned <u>b/</u>	654	622	436	332	302
Total	1,381	1,412	1,084	993	1,066

a/ Edible weight

b/ Processed weight. Estimates refer to pack year beginning in July of year shown.

Supplies of canned fish available for civilian distribution from the 1944 pack total approximately 300 million pounds. Supplies of salmon are particularly short, providing only about 25 percent of the amount normally consumed. This relatively small allocation will mean that shortages of canned fish in the civilian market are a certainty until late in 1945, when supplies from the 1945 pack will become available in distribution channels.

Demand and Requirement for 1945

It is estimated that the demand for fresh and frozen fish in 1945 will be approximately equal to the quantity available in 1944. The relatively high retail price for fish has in part counterbalanced the increase in demand accompanying the high income level. In addition, much of the increased demand for fresh and frozen fish has come from the hotel and restaurant trade. If there should be some improvement in the supply of meats in the latter half of 1945 and if there is a decrease in hotel

and restaurant meals, the demand for fish from this source would slacken. Demand for cured fish appears to be relatively stable and is expected to be about equal to consumption in 1935-39.

The civilian requirement for fresh and frozen fish and for cured fish, as shown in table 11, is placed at the level of unrestricted civilian demand to insure an equitable distribution of the available supply. Wartime factors which reduced supplies of fish in 1942 and 1943 should be largely eliminated in 1945, and civilian supplies in the amounts requested should be possible.

Table 11.--FRESH, FROZEN, CURED FISH: Civilian Demand and Requirement, 1945

Item	Per capita		Aggregate	
	Require-		Require-	
	Demand	ment	Demand	ment
	1	2	3	4
	Pounds		Mil. lbs.	
Fresh and frozen <u>a/</u>	4.9	4.9	640	640
Cured <u>a/</u>	1.1	1.1	140	140
<u>a/</u> Edible weight basis.				

The civilian demand for canned fish in 1945 is expected to be approximately equal to the average quantity consumed annually in the 1935-39 period. The greater availability of fresh and frozen fish in 1945, the anticipated decline in the level of national income, and the relatively high prices of most canned fish are expected to cause a decline from the record high level of 1944 in the demand for canned fish.

The requirement for canned fish, as outlined in table 12, shows the annual rate at which canned fish will be available in the first half of 1945 and the annual rate at which canned fish is requested for the last 6 months of the year. For the first 6 months of 1945 little change can be made in the availability of canned fish for civilians. Practically all of the 1944 pack has been completed with the exception of pilchards, and the civilian share determined by the level of the Government set-aside.

The annual rate of the requirement for the last 6 months of 1945 is based upon the minimum quantity that would be required to (1) meet minimum essential requirements, (2) permit reasonably orderly marketing conditions, and (3) stretch supplies throughout the pack year. If this requirement is met, civilian supplies from the 1945 pack would be approximately equal to the amount distributed to civilians from the 1942 pack.

The requirement is based upon a substantial increase in the supply of salmon available for civilian distribution as compared with the quantity available from the 1944 pack. However, even if this requirement is met in full, supplies of salmon would be but 50 percent of the amount civilians annually consumed in the pre-war period.

Table 12.--CANNED FISH: Civilian Demand and Requirement, 1945

Item	Per capita			Aggregate		
	Estimated:	Annual allo-		Estimated:	Annual allo-	
	civilian:	cation or		civilian:	cation or	
	demand :	requirement		demand :	requirement	
	1945 :	rate		1945 :	rate	
	Jan.-	July		Jan.-	July-	
	June a/	Dec. b/		June a/	Dec. b/	
	1	2	3	4	5	6
	- - - Pounds - - - - -			- - Mil. lbs. - - - -		
Salmon	0.6	1.1		80.0	150.0	
Pilchards	0.5	0.5		64.0	70.0	
Sea herring and sardines	0.3	0.5		32.0	65.0	
Mackerel	0.2	0.4		24.0	55.0	
Tuna	0.5	0.5		68.0	70.0	
Shrimp	0.1	0.1		7.0	12.0	
Other fish and roe	0.1	0.1		16.0	15.0	
Other shellfish	0.1	0.1		11.0	13.0	
Total c/	5.0	2.4	3.3	650.0	302.0	450.0

a/ Based on 1944-45 civilian allocation

b/ Requested 1945-46 allocation.

c/ Totals adjusted to addition of individual items.

Problems of Distribution

Fresh fish consumption normally is at a much higher level in coastal areas than in most inland sections. Many retail stores in areas far from the coast are not equipped to handle fresh or frozen fish, and this is a limiting factor in stimulating wider distribution. Because of this distribution pattern difficulties are encountered in marketing both a short and a long supply. If supplies are short there is great difficulty in keeping supplies in coastal areas where they are an important part of the food supply, because of the pressure to move

normal supplies inland. When supplies are long, promoting increased consumption is difficult because the areas where the greatest increase could occur (non-urban inland areas) frequently do not have facilities for the distribution of fresh and frozen fish.

It is expected that relatively abundant supplies of frozen fish will continue to be available throughout most of 1945. To move this fish into consumption channels, it may be necessary to continue the promotion campaign undertaken late in 1944.

If a total of 450 million pounds of canned fish are made available to civilians out of the 1945 pack, the level of noncivilian requirements, other than the military, would have to be significantly lower than the quantity provided from the 1944 pack. If this reduction cannot be made, it will, of course, be possible to distribute a smaller supply to civilians under rationing. However, the quantity should not be as small as that provided to civilians out of the 1943 or 1944 pack.

It is possible to distribute a short supply of canned fish by rationing if the supply available will meet a reasonable percentage of the unrestricted demand. Supplies of canned fish from the 1943 pack available for civilian distribution probably met from 60 to 65 percent of the demand. Distribution of supplies from the 1943 pack was unsatisfactory, and even at high ration point values canned fish moved off retail shelves at too rapid a rate, especially in the South and Southwest. Supplies were almost completely exhausted several months before fish from the 1944 pack became available. Civilian supplies from the 1944-45 pack will satisfy about 45 percent of the demand, and in the most important item, salmon, but 25 to 30 percent of the demand will be filled. It appears that this supply is too short to maintain reasonable distribution throughout the country even with rationing controls.

EGGS, CHICKENS, and TURKEYS
(Prepared by Faith M. Santoro)

Eggs

Significance to the Food Supply

Eggs are an important protective food and are especially valuable for growing children and convalescents since the proteins are of the type indispensable for building physical strength. Eggs are highly adaptable in cooking, as they may be served in a wide variety of ways, and they contribute toward a greater use of other nutritionally desirable foods such as milk and cereals. Eggs contain the B vitamins, especially thiamine and riboflavin, and the yolks are rich in iron in a readily available form. In 1944, eggs furnished approximately 6 percent of the protein, 7 percent of the iron, and 7 percent of the riboflavin in the average diet.

Consumption in Recent Years

The consumption of eggs has tended to vary inversely with the price of eggs. During the past few years, however, with increased incomes, consumption has increased even with higher prices (table 13). The per capita consumption of eggs in 1944 is estimated to be 347 (table 14). This is 4 eggs per person more than the per capita consumption in 1943 and over 16 percent more than the 1935-39 average. Since 1922 egg consumption has exceeded 300 eggs per person except for the 4 years, 1933-36. This indicates that the period 1935-39 is most abnormal as a representative period for egg consumption because it includes 2 of the 4 low-consumption years. The 1926-30 average consumption of eggs was 336 per person, and in 1927 per capita consumption was only 5 eggs less than the 1944 estimated peak consumption.

Table 13 -- EGGS and POULTRY: Civilian Aggregate Annual Consumption for Specified Periods

Item	: 1932	: 1935-39	: 1941	: 1942	: 1943	: 1944 a/
	: 1	: 2	: 3	: 4	: 5	: 6
----- Million dozen -----						
Eggs	3,258	3,225	3,434	3,430	3,704	3,739
----- Million pounds -----						
Chickens b/	2,478	2,325	2,568	2,844	3,636	2,932
Turkeys b/	261	343	472	488	421	420

a/ Preliminary.

b/ Dressed weight basis.

Table 14 --EGGS and POULTRY: Civilian Per Capita Annual Consumption for Specified Periods

Item	: 1932	: 1935-39	: 1941	: 1942	: 1943	: 1944 a/
	: 1	: 2	: 3	: 4	: 5	: 6
- - - - - Number of eggs - - - - -						
Eggs	311	298	311	311	343	347
- - - - - Pounds - - - - -						
Chickens b/	19.7	17.9	19.4	21.5	28.1	22.7
Turkeys b/	2.1	2.6	3.6	3.7	3.2	3.2

a/ Preliminary.

b/ Dressed weight basis.

Demand and Requirements for 1945

The per capita requirement for eggs has been placed at 335 (table 15). There appears to be a fairly close relationship between the total expenditure for eggs and the national income. Consciously or not the housewife tends to spend a rather constant proportion of the income for eggs, buying more when the price is low and cutting down on purchases when the price of eggs is high. On the basis of a national income of 140 billion dollars in 1945, a requirement of 335 eggs per person would normally satisfy the demand for eggs if retail prices remain close to ceiling levels. If meat should be in very short supply the demand may be in excess of this amount. More might also be consumed if larger supplies would be available during the last half of the year at somewhat lower prices.

Table 15 --EGGS and POULTRY: Civilian Demand and Requirements for 1945

Item	Per capita		Aggregate	
	: Demand	: Require-	: Demand	: Require-
	: 1	: ments	: 3	: ments
- - - - - Number - - - - - Million dozen - - -				
Eggs	344	335	3,726	3,629
- - - - - Pounds - - - - - Million pounds - - -				
Chickens a/	22.0	21.5	2,860	2,795
Turkeys a/	4.0	3.5	520	455

a/ Dressed weight basis.

The quarterly requirements take into consideration the seasonal pattern of civilian consumption. Normally (1937-41), 26 percent of the eggs is consumed in the first quarter, 27 percent the second quarter, 25 percent the third quarter, and 22 percent the fourth quarter. Since 1941 consumption of eggs has varied from this pattern. From 1941 to date the second quarter consumption has been lower than the first quarter. Consumption in the last two quarters of 1942 and 1943 was a larger-than-normal proportion of the year's consumption. The quarterly proportion of consumption in 1943 was 26 percent, 25 percent, 25 percent, and 24 percent. Consumption in 1944 was high in the first quarter, exceeding the consumption for the first quarter of 1943 by 2.6 percent. But in the second quarter of 1944, consumption was 2.8 percent less than that of 1943. This changing consumption pattern has been taken into consideration in establishing the 1945 quarterly requirements (table 16).

Table 16 --EGGS and POULTRY: Civilian Aggregate Annual Requirements by Quarters, 1945

Item	Jan.-	Apr.-	July-	Oct.-
	Mar.	June	Sept.	Dec.
	1	2	3	4
-----Million dozen-----				
Eggs	938	907	911	873
-----Million pounds-----				
Chickens	362	608	975	850
Turkeys	13	18	5	419

It is estimated that civilians used 10 million pounds of dried whole eggs and 10 million pounds of dried albumen and yolk in 1943. Probably the same amount of dried albumen and yolk was used in 1944, but nearly 15 million pounds of dried whole eggs were used. Indications are that civilian consumption of dried eggs in 1945 will be the same as in 1944.

Problems of Distribution

The problem of distributing eggs is complicated by a number of factors, two of which are: (1) the variation in production among areas, and (2) regional differences in seasonal production patterns. A large part of the farm production of eggs is concentrated in the North Central Region of the United States, as this region accounted for 50 percent of the total production in 1943, while only about

30 percent of the civilian population of the country is located in this area. As a result, in normal times a major movement of shell eggs occurs between regions to supply the consumer needs of the population. Moreover, surplus eggs at the period of flush production normally are placed in cold storage and held until the period of short production.

Other complicating factors affecting distribution result from the rather significant volume of eggs handled through other than regular retail and wholesale distribution channels. These include eggs produced by nonfarm backyard flocks marketed direct to consumers by producers or hucksters on regular routes and handled through country stores. Moreover, about 20 percent of the eggs produced on farms is consumed there and does not enter regular distribution channels.

The disposition of the record production of eggs early in 1944 was extremely difficult, because of limited cold storage space, scarcity of containers, overtaxed marketing facilities, and shortage of manpower. Requirements for the Army and lend-lease were met, all the storage space available was filled with eggs, and housewives were urged to purchase an additional dozen eggs to store in their refrigerators. The total supply of eggs -- fresh, frozen and dried -- appears to be more than adequate for 1945, although at times the supply of Grades A and AA eggs may be insufficient to meet demand in certain areas. It is probable that the problems encountered in 1944 may be repeated in 1945.

Chickens and Turkeys a/

Significance to the Food Supply

Poultry meat is a very good source of several important nutrients, a good source of protein, a good source of phosphorus and iron, and a fair, or moderately good, source of thiamine. Of all the nutrients, niacin is the one supplied in greatest abundance by poultry meat in relation to the dietary requirements.

Poultry is often served interchangeably with the high priced meats. Because of its relatively high price, it is used more by families with high incomes. Data from "Family Food Consumption in the United States," USDA Misc. Pub. No. 550 show that in the spring of 1942 the group of families with incomes of \$3,000 and over consumed about twice as much poultry per capita as did the group with incomes below \$500.

a/ Ducks and geese are not included because the production is relatively unimportant. It has been estimated that approximately one-half pound of duck and one-quarter pound of goose per person were consumed in 1943.

Probably more people eat chicken and turkey because they like poultry than because of the high nutritive value received. This does not detract from the importance of their high nutritive value, and increased consumption is justified when and where it is practicable.

Consumption in Recent Years

Per capita consumption of poultry increased quite rapidly from 1940 to 1943, partly as a result of rising incomes, and partly because of meat rationing in 1943. In 1944 per capita consumption of chicken was approximately 22.7 pounds. This represented a decrease of 5.4 pounds per person from the consumption in 1943, which exceeded all records, but it represented an increase of 4.8 pounds per person above the 1935-39 average. Consumption of poultry is much more stable than these changes indicate. Since 1909 the per capita consumption of chicken has reached a point lower than the 1935-39 average (17.9) only four times, and the lowest consumption figure reported is 16.9 pounds per person in 1938. Prior to 1942, a per capita consumption over 20.0 pounds was reported only five times since 1910.

Beginning in 1935, per capita consumption of turkey increased steadily until 1942 when the peak of 3.7 pounds per person was reached. In 1943 the per capita consumption dropped to 3.2 pounds, and it is expected to remain at the same level in 1944, due to the large military requirements.

Demand and Requirements for 1945

The supply of chicken that should be available for consumption in any one year should be closely related to the egg requirements for the following year. Storage space, marketing facilities, manpower and noncivilian requirements must all be taken into consideration in establishing the requirement for chicken. On the basis of the probable egg requirements for 1946, it is estimated that over 3,100 million pounds, dressed weight, of chicken should be produced in 1945. The 1945 civilian requirement for chicken, therefore, has been placed at 21.5 pounds per capita, even though this quantity is smaller than the estimated demand of 22.0 pounds per capita. It is the same as the 1942 consumption and is believed to be sufficient for relatively satisfactory distribution without need for special controls at the retail level assuming that the national income falls to around 140 billion dollars in 1945.

Civilian requirements for turkey for 1945 are estimated to be 3.5 pounds per capita. Considering the large consumer incomes that are available, the desire for greater varieties of food, and the anticipated short supply of chicken and meat, civilians probably would consume turkey at the rate of at least 4 pounds per person, if this quantity were available.

Problems of Distribution

Most of our chickens and turkeys are produced on general farms. There are; however, many specialized poultry farms, some of them large. Commercial broiler production is concentrated in the Delaware-Maryland-Virginia areas and in sections of the Southern States, principally Arkansas, Georgia, and North Carolina. Broiler production has increased greatly near many metropolitan centers. It is mainly dependent upon purchased and imported feedstuffs, as contrasted with poultry on general farms where at least a part of the rations is produced. The heaviest turkey producing States in order of their production in 1943 were: California, Texas, Minnesota, Oregon, Iowa, Washington, Utah, Missouri, Nebraska, and Pennsylvania. These 10 States supplied nearly 65 percent of the total United States production of turkeys in 1943.

With a short supply of poultry, equitable distribution is very difficult because of the large number of producers involved, the ease with which poultry can be marketed directly to the retailer and consumer, the seasonal character of a large part of the production, and variation in the types of production in the different areas.

DAIRY PRODUCTS

(Prepared by C. I. Hendrickson)

Significance to the Food Supply

Milk and its products are used for food in a variety of forms. They are the most valuable single food group in our diet; in fact, an increased use of these products is one of the surest ways of improving most diets. They contain substantial amounts of nutrients which are deficient in many diets, such as proteins, calcium, phosphorus, riboflavin, and thiamine. About three-fourths of the calcium, one-half of the riboflavin, and one-fourth of the protein in the average diet in the United States in 1944 was furnished by milk and milk products which are used efficiently in supplementing such foods as cereals which are abundant and widely used by low-income groups.

Fluid milk is being used increasingly as a beverage. In terms of milk solids not fat, it represented 65 percent of the civilian consumption of milk and milk products in 1944. Evaporated milk is important in human diets where the fluid milk supply is inadequate and is widely used by low-income groups, both because it is relatively low in price and because it does not require refrigeration. It is widely used also for infant and invalid feeding because it is standardized and sterile. Dried whole milk packed in inert gas and condensed milk also are relatively nonperishable and are used in the absence of fluid milk. Cheese is an excellent source of milk nutrients in compact form.

Nonfat dry milk solids contain practically all the milk nutrients except the fat and fat soluble vitamins and is quite inexpensive. Its wider use, therefore, would be an economical means of improving diets. An increased use of nonfat dry milk solids in bread which is consumed by all income groups is especially desirable.

Butter, of all the forms of fat, is the one most in demand as a spread for bread, for home cooking, and for a number of industrial uses. It is relatively expensive, but it is so much desired that much more would be used if it were available.

Cream, comparatively speaking, is a luxury food. It is more expensive than butter but is in strong demand, largely because of its palatability, both in household uses and in food manufacturing.

General

Consumption of dairy products by civilians in the United States had been increasing rather steadily, reaching a peak in 1942. In 1943, however, the supply available for civilians was reduced by heavy military and lend-lease takings and consumption fell below the pre-war level, amounting to 767 pounds per capita in terms of milk equivalent compared with 801 pounds in 1935-39. The comparable figure for 1944 is expected to be 777 pounds, a slight increase over the 1943 rate.

This reduction from the pre-war average has been effected in several ways. Butter, cheese, and evaporated and condensed milk are rationed, and in addition, substantial proportions of butter and Cheddar cheese are required to be set aside by manufacturers for Government agencies. Part of the output of spray process nonfat dry milk solids also is set aside. Distribution of fluid milk and cream in the larger markets is restricted, and the butterfat content of fluid cream is limited to 20 percent. Use of butterfat and other milk solids in ice cream also is held down.

In considering the civilian requirements for dairy products in 1945 it seems desirable to differentiate between the first half and the second half of the year. Those for the first half are based on the assumption that supplies of milk for all uses will be somewhat greater than for that period in 1944 but not equal to civilian and non-civilian demand. For the second half of 1945, it is assumed that demand will slacken and the requirements are set at a level to permit equitable distribution without any controls. The question of meeting these requirements is discussed for the several products under "Problems of Distribution."

Fluid Milk and Cream

Consumption in Recent Years

The consumption of fluid milk and cream has increased rapidly during the war, with the consumption of each successive year exceeding any previous record (tables 17 and 18). This increase resulted both from higher incomes and a growing recognition of the nutritional importance of milk. Civilian demand for fluid milk and cream was so great in 1943 that it was causing an undesirable degree of diversion from essential manufactured dairy products, necessitating the promulgation of War Food Order 79 to limit further diversion.

Consumption of fluid milk in 1944, estimated at 345 pounds per capita, is 27 percent greater than the average for the period 1935-39. Indications are that the 1944 figure would have been larger if consumption had not been restricted by War Food Order 79.

Cream consumption increased from an average of 10.9 pounds per capita in 1935-39 to 14.5 pounds in 1943, a gain of 33 percent, then fell back to 13.1 pounds in 1944, principally because of War Food Orders 13 and 79. In the absence of restrictions, cream consumption would have been materially greater this year than in 1943.

Demand and Requirements for 1945

The demand by civilians for fluid milk and cream in 1945 will be slightly lower than that of 1944 but is expected to equal 1944 consumption -- approximately 410 pounds for milk used in fluid form and the milk equivalent of fluid cream. It is expected that the demand will be at an annual rate greater than this for the first half of the

Table 17 --DAIRY PRODUCTS: Civilian Per Capita Annual Consumption
for Specified Periods

Item	:	:	:	:	:	:
	:1932	:1935-39:	1941	: 1942	: 1943	:1944 a/
	: 1	: 2	: 3	: 4	: 5	: 6
	-Pounds-					
Milk, fresh fluid	280.8	272.1	280.9	296.1	330.8	345.2
Cream b/	11.1	10.9	11.2	12.1	14.5	13.1
Butter	18.1	16.7	15.9	15.6	11.9	12.0
Cheese, American	3.0	3.9	4.4	4.6	3.2	3.5
Cheese, other	1.4	1.6	1.6	1.7	1.9	1.6
Milk, condensed whole	1.6	1.6	1.7	1.9	1.8	1.8
Milk, evaporated	12.3	15.1	16.5	17.0	17.1	13.3
Ice cream	5.8	9.5	13.5	15.9	c/	c/
Ice cream, milk	3.7	5.9	8.3	9.5	9.3	10.8
Ice cream, cream	1.1	1.8	2.5	2.9	1.5	1.8
Dried whole milk	.08	.13	.17	.19	.38	.30
Malted milk	.09	.11	.13	.22	.3	.2
Milk, condensed skim	2.1	2.8	3.8	4.2	4.8	4.1
Nonfat dry milk solids	1.0 d/	1.9	2.4	2.3	1.8	2.1
Cottage cheese e/	1.3	1.5	1.9	2.0	2.0	1.7
Buttermilk and skim milk drinks	52.6	53.9	56.2	57.7	58.8	57.7

a/ Preliminary.

b/ On basis of 25 percent fat through 1942; 20 percent for 1943
and 1944.

c/ Not available.

d/ Estimated.

e/ And other skim milk cheese.

Table 18 --DAIRY PRODUCTS: Civilian Aggregate Annual Consumption
for Specified Periods

Item	: 1932	: 1935-39	: 1941	: 1942	: 1943	: 1944 <u>a/</u>
	: 1	: 2	: 3	: 4	: 5	: 6
----- Million pounds -----						
Milk, fresh fluid	35,257	35,316	37,267	39,170	42,879	44,641
Cream <u>b/</u>	1,395	1,413	1,480	1,600	1,882	1,700
Butter	2,275	2,170	2,105	2,067	1,538	1,550
Cheese, American	371	511	580	617	416	448
Cheese, other	175	209	210	220	247	209
Milk, condensed whole	197	209	221	254	232	231
Milk, evaporated	1,548	1,954	2,200	2,241	2,218	1,720
Ice cream	728	1,232	1,797	2,103	<u>c/</u>	<u>c/</u>
Ice cream, milk	460	770	1,100	1,263	1,205	1,401
Ice cream, cream	138	231	332	383	199	233
Dried whole milk	10	17	23	25	49	39
Malted milk	11	14	17	29	43	27
Milk, condensed skim	261	360	506	550	618	528
Nonfat dry milk solids	126 <u>d/</u>	246	324	310	235	273
Cottage cheese <u>e/</u>	164	198	257	263	256	224
Buttermilk and skim milk drinks	6,600	7,000	7,450	7,640	7,617	7,460

a/ Preliminary.

b/ On basis of 25 percent fat through 1942; 20 percent for 1943 and 1944.

c/ Not available.

d/ Estimate.

e/ And other skim milk cheese.

year but less for the last half since it is thought that the national income will decline in 1945. For this reason the requirements for fluid milk have been placed lower in the last two quarters than in the first two quarters. The average for the year for fluid milk is 340 pounds per capita. The requirements for fluid cream have been placed materially lower than demand for the first two quarters as it is expected that restrictions on cream will be continued at least into the first half of the year. During the last half of the year the requirements have been increased to the level of expected demand, suggesting a per capita consumption of 13.9 pounds of 20 percent cream in 1945. (See tables 19 and 20)

Nutritionally, it would be highly desirable to maintain the record rate of fluid milk consumption of 1944 or even to increase it, but this may be a difficult task. Should the national income in 1945 fall to the level assumed in these requirements, it is doubtful if milk consumption could be maintained at the 1944 level throughout all of 1945 without special programs to encourage consumption.

Problems of Distribution

Milk handling costs are relatively high, in part because the product is highly perishable and easily contaminated, requiring careful handling until it is consumed. Further, municipal and State regulations, which vary from place to place, tend to restrict the free movement of fluid milk and cream and increase the costs of marketing. Duplication of delivery services likewise adds to marketing costs.

Even with a high national income, many families are unable or unwilling to purchase milk in adequate quantities. With prospects for falling incomes in 1945, every effort should be made to reduce distribution costs in order that good quality milk may be available as cheaply as possible.

The adequate utilization of "surplus milk", the milk not used in fluid form, is sometimes a problem in the season of flush production because of lack of facilities for converting into manufactured dairy products or because of a lack of profitable outlet for some of the cheaper dairy products for which the surplus might be utilized. There will be these seasonal surpluses but experience indicates that in general the facilities are adequate for handling them. There is no present indication that the seasonal surplus of milk in the fluid markets will be more of a problem than in the past few years.

The low point in fluid milk supplies is normally reached late in the year, when some markets do not have sufficient milk to meet the demands. With the increased production in the fall of 1944 very few markets experienced this difficulty. With falling incomes and lower demand for fluid milk and cream there should be even fewer areas with short supplies of milk in the fall of 1945.

Table 19 --DAIRY PRODUCTS: Civilian Demand and Requirement, 1945

Item	Per capita		Aggregate	
	: Require-		: Require-	
	: Demand		: Demand	
	1	2	3	4
	- - - Pounds - - -		- Million pounds - -	
Milk, fresh fluid	410.0 <u>a/</u>	340.0	53,295 <u>a/</u>	44,196
Cream, 20% fat	-	13.9	-	1,807
Butter	16.0	14.1	2,080	1,832
Cheese, American	7.0 <u>b/</u>	4.6	910 <u>b/</u>	600
Cheese, other	-	1.7	-	219
Milk, condensed whole	-	1.7	-	224
Milk, evaporated	19.0 <u>c/</u>	15.8	2,470	2,055
Ice cream	17.0	-	2,210	-
Ice cream, milk	-	9.9	-	1,289
Ice cream, cream	-	2.4	-	314
Dried whole milk	-	.31	-	40.6
Malted milk	-	.24	-	31
Milk, condensed skim	-	4.2	-	550
Nonfat dry milk solids	-	3.1	-	408
Cottage cheese <u>d/</u>	-	1.8	-	237
Buttermilk and skim milk drinks	-	57.8	-	7,508

a/ Milk equivalent for fluid milk and cream.

b/ Demand for all whole milk cheese.

c/ Demand for evaporated and condensed whole milk.

d/ And other skim milk cheese.

Table 20 --DAIRY PRODUCTS: Civilian Requirements by Quarters, 1945

Item	: Jan.-	: Apr.-	: July-	: Oct.-
	: Mar.	: June	: Sept.	: Dec.
	: 1	: 2	: 3	: 4
	- - - - - Million pounds - - - - -			
Milk, fresh fluid	11,125	11,150	11,060	10,861
Cream	415	440	507	445
Butter	375	425	520	512
Cheese, American	120	145	170	165
Cheese, other	46	53	55	65
Milk, condensed whole	45	52	75	52
Milk, evaporated	400	480	625	550
Ice cream, milk	196	393	497	203
Ice cream, cream	39	65	148	62
Dried whole milk	9.8	9.8	10	11
Malted milk	7	9	8	7
Milk, condensed skim	105	185	150	110
Nonfat dry milk solids	84	100	118	106
Cottage cheese ^{a/}	53	66	66	52
Buttermilk and skim milk drinks	1,760	1,966	1,980	1,802

^{a/} And other skim milk cheese.

There is a possibility that in a number of markets in 1945 increasing proportions of milk may become "surplus" should production increase materially and demand fall off because of lowered urban incomes. Under such circumstances it will be necessary to utilize this milk for manufacturing purposes unless programs to maintain fluid milk consumption are put into operation. This situation is less likely to occur in the fall and early winter of 1945, when production is seasonally low, than in the first half of 1946.

Butter

Consumption in Recent Years

Consumption of butter in 1944 continued at about the 1943 level, sharply lower than in pre-war years (tables 17 and 18). Per capita consumption for 1944 is estimated at 12.0 pounds compared with approximately 17 pounds before the war, with a peak consumption of 18.3 pounds. Production has fallen off sharply, largely because of heavy war demands for other forms of dairy products which have made it more profitable to use milk for products other than butter. In addition, military takings have been high and some butter has been diverted to other noncivilian uses. The result is that the quantities available for civilians have been greatly reduced.

Demand and Requirements for 1945

Demand for butter in 1944 probably has been at a record level. Even though ration point values for butter are high, many retail stores have had only limited supplies during much of the year, and it is evident that much larger quantities of butter would have been taken if they had been available.

Demand for butter in 1945 is estimated at 16.0 pounds per capita (table 19). This figure makes allowance for somewhat lower incomes in that year than in 1944.

The civilian requirement averages 14.1 pounds per capita for 1945 (table 19). The level for the first half of the year is lower than for the last half. It is based on the assumption that there will not be enough milk available to provide all the milk and dairy products which would be taken by civilian and noncivilian claimants, thus necessitating restrictions on civilian consumption. Should the controls now in effect on fluid milk and cream be removed, it is probable that the demand for fluid milk and cream and perhaps other products would be satisfied before the demand for butter at present prices.

For the second half the requirement for butter has been placed at the quantity estimated as needed to meet the demand in that period. The conditions required to provide the supply to satisfy this demand are considered later.

Problems of Distribution

The chief problem with respect to butter is to effect an equitable distribution of the limited supplies of creamery butter. Very little farm butter is available for distribution, since most of it is consumed on the farms where it is churned and nearly all the remainder moves to consumers in nearby towns.

Rationing helps in obtaining a reasonably equitable distribution of butter but experience indicates that even under the present system of rationing a supply of creamery butter as low as 100 million pounds per month is difficult to distribute. It appears that the preference for butter is so great that even though substitutes, such as margarine, have been readily available during the war period there has been only a limited use of these substitutes. Evidently a number of people reduce their use of spreads if they cannot obtain butter, while some apparently use fats other than margarine to replace butter in cooking. Further, indications are that consumption of creamery butter in producing areas is not reduced in proportion to the decrease in the supply, with the result that supplies available in consuming centers are smaller than would be indicated by the output.

Turning to the question of the supply of butter required to satisfy civilian demand in the second half of 1945, it is apparent that the requirements set for that period probably will be met only if there is a substantial drop in the production of other manufactured dairy products. It is unlikely that the amounts required by the armed forces, representing 68 percent of the noncivilian takings, will be reduced greatly in the latter part of 1945 nor are all the other noncivilian demands likely to cease. Total milk production may be somewhat greater in that period than in the latter part of 1944 if weather and crop conditions are favorable, but it should be borne in mind that the condition of pastures and the outturn of feed crops in 1945 may easily be less favorable than in 1944. If butter production were to be brought up to the level necessary to meet civilian demands in the second half of 1945, it is probable that the main reliance would have to be placed on a diversion of milk from whole milk products to butter, and nonfat dry milk solids. (see table 20)

Cheese

Consumption in Recent Years

Consumption of cheese in 1943 and 1944 showed a considerable decrease from the peak figure reached in 1942. Demand was keen but large non-civilian takings cut down the quantities available for civilian consumption, leaving only an estimated 5.1 pounds per capita in 1943 and 1944 in contrast to the 6.3 pounds consumed in 1942.

The pattern of consumption of Cheddar cheese has differed materially from that of other whole milk cheese because of the incidence of war demands. Since noncivilian requirements are principally for Cheddar cheese the civilian consumption of that cheese has fallen off more

sharply than that of other types, dropping from 4.6 pounds in 1942 to an estimated 3.5 pounds in 1944. In contrast, the consumption of other cheese continued to increase through 1943, reaching 1.9 pounds per capita in that year. In part this increased consumption represents a diversion of milk from the manufacture of Cheddar cheese to that of other cheese which persisted until it was reduced by War Food Order 92. Consumption of other cheese then decreased to an estimated 1.6 pounds per capita in 1944.

Demand and Requirements for 1945

Civilian demand for all whole milk cheese in 1945 is estimated at 7.0 pounds per capita (table 19); an amount in excess of the anticipated supply. It is expected that lower incomes will result in some reduction in the demand from present levels and that for the last half of the year it will be below the average for the year.

Civilian requirements for 1945 have been placed at 4.6 pounds of American cheese and 1.7 pounds of other cheese per capita (table 19), a total of 6.3 pounds compared with present consumption of 5.1 pounds. As with butter, this estimate is based upon the assumption that the amount available for civilians during the first half will be held down by present controls in order to provide for war needs. For the last half it is the quantity assumed to be needed to meet demand. The distribution between American and other types of cheese is approximately in line with the normal consumption pattern. This probably will be more satisfactory to the public than was the pattern in 1943 and 1944.

Problems of Distribution

Cheese has been rationed at an annual rate of about 5 pounds per capita since early in 1943. This quantity has been much smaller than the demand which probably was in excess of 7 pounds. In view of this disparity, it has been difficult to obtain equitable distribution, particularly since the intensity of the demand varies considerably from place to place.

The problem of quality has been even more serious than that of the quantity available. With the pressure for supplies keeping prices of even ordinary cheese at ceiling levels there has been little incentive to give cheese sufficient time to cure properly. The supply of well-cured cheese has been so small that its equitable distribution has been practically impossible.

In order to have enough cheese to equal the probable civilian demand in the second half of 1945 it would be necessary to effect an increase of approximately 40 percent in the supply available for civilians. Nearly all of this could be made available if shipments to our allies were to be discontinued, leaving less than 5 percent of the total amount for civilians to be provided by reductions in the amounts going to the armed forces or by an increase in total cheese production.

Condensed and Evaporated Milk

Consumption and Demand in Recent Years

The consumption of canned condensed milk was declining prior to the war; with the war there has been a slight increase in consumption of all condensed milk (canned and bulk) from 1.6 pounds per capita in 1935-39 to 1.9 pounds in 1942, 1.8 in 1943, and an estimate of 1.8 in 1944 (table 17). Its consumption was increased in part because of the inability of industrial users to get the same milk nutrients in other products and in part because of the sugar contained in it. The increase probably is not an indication of a trend that will continue when other materials containing these nutrients are again available.

Evaporated milk, in contrast to condensed, showed a rapid upward trend in consumption prior to the war. This trend was continued early in the war, going from 15.1 pounds per capita in 1935-39 to 16.5 pounds in 1941 and 17.1 pounds in 1943. In 1944, however, the amounts available for civilians were reduced by larger war requirements and consumption was reduced to an estimated 13.3 pounds per capita. Even this level was possible only because some noncivilian claimants were unable to take all the evaporated milk allotted to them.

Demand and Requirements for 1945

The demand for evaporated and condensed milk, combined, in 1945 is placed at 19.0 pounds per capita (table 19).

The requirements for condensed and evaporated milk for civilians for 1945 average 1.7 and 15.8 pounds per capita, respectively (table 19). The total of the two will not equal the demand, but as with butter and cheese, the milk will not be available to produce the amount that probably would be consumed at present ceiling prices. The requirements for the first half of the year should provide a reasonably satisfactory distribution throughout the country. Those for the last half are the amounts that it is estimated would be needed to meet demand in that period. (See table 20.)

Problems of Distribution

Rationing has been only moderately effective in controlling the distribution of condensed and evaporated milk at the 1944 level of supply. Supplies in many localities have been adequate but reports from a number of others indicate that at times there was not enough to care for the needs of special groups, such as infants, to whom evaporated milk is essential. It appears that under present price and rationing controls it is not possible to secure equitable distribution with a civilian supply as low as 130 million pounds monthly.

Indications are that some reduction in noncivilian takings will be necessary if enough condensed and evaporated milk is to be available to meet the civilian requirements for the last half of 1945. With production equal to that of 1944 the elimination of the lend-lease shipments tentatively allocated for July-December 1945 would make available a civilian supply which would fall short only about 5 percent of the amount required for this purpose.

Ice Cream

Consumption in Recent Years

The long-time upward trend in the consumption of commercial ice cream was accelerated early in the war, reaching a peak in 1942 (table 17). Then consumption decreased in 1943, because the use of milk and milk solids in ice cream was restricted through War Food Order 8.

Since ice cream is a luxury food item for many people, its consumption is greatly affected by periods of prosperity and depression. Only 5.6 pounds were consumed in 1933 in contrast to 10.0 pounds in 1929 and from 10 to 16 pounds in 1937-42. With the high national income in 1943 and 1944 much more ice cream would have been consumed if it had been available.

Demand and Requirements for 1945

Demand for ice cream in 1945 is placed at 17 pounds per capita. This figure is smaller than the amounts which probably would have been consumed in 1943 and 1944, but it is based upon the assumption that incomes may be lower during the latter part of 1945.

Requirements of milk and cream for use in ice cream in 1945 average 9.9 pounds of whole milk and 2.4 pounds of 40 percent cream per capita (table 19). In addition, it is expected that other milk products will be used in larger quantities. These annual requirements should be distributed among the quarters with a view to the highly seasonal consumption of ice cream which is smallest in January-March and largest in July-September. (See table 20).

Problems of Distribution

The amount of ice cream available early in 1945 is unlikely to be equal to even the seasonally small demand. Consequently, War Food Order 8 probably should be continued to conserve milk and cream. If incomes decline later in the year the demand for ice cream may slacken and in that event there may be less need to restrict the amounts of milk and cream used in ice cream.

Dried Whole and Malted Milk

Consumption in Recent Years

Dried whole milk in the United States is used principally by food industries although recently some has been reconstituted and consumed directly. Total consumption has increased rapidly, going from 10 million pounds in 1932 to 23 million pounds in 1941 and 49 million pounds in 1943 (table 18). It is estimated that total civilian consumption will reach 39 million pounds in 1944. A large proportion of the dried whole milk consumed by civilians is made by the roller process. Requirements of Government agencies absorb most of the expanded production of spray process dried whole milk.

Malted milk also has shown a considerable gain in consumption. From a total figure of about 11 million pounds in 1932, it increased to an average of 14 million pounds in 1935-39 and jumped to 43 million pounds in 1943. Consumption in 1944 was cut back under War Food Order 93 and is estimated at 27 million pounds.

Requirements for 1945

Requirements for dried whole milk, roller and spray combined, are set at 40.6 million pounds for 1945, slightly above the level of 1944 consumption. This amount represents less than 20 percent of the anticipated output, but it is expected that most of the spray process dried whole milk will continue to be taken by the armed forces.

Requirements for malted milk in 1945 have been established at 31 million pounds, an amount slightly greater than the estimated consumption in 1944. This amount provides for an average per capita consumption of 0.24 pound.

Skin Milk Products

Skim milk products are becoming increasingly important in the Nation's food supply as the value of the nonfat nutrients in milk comes to be recognized. These products contain practically all the food values of milk except the milk fat and certain fat-soluble vitamins and are exceptionally valuable foods. They provide large quantities of animal protein of the highest quality as well as needed amounts of calcium, phosphorus, and a number of vitamins, including riboflavin.

Nonfat dry milk solids and condensed skim milk are used principally in the manufacture of other foods, although a small but increasing demand for nonfat dry milk solids for household use had developed when a supply was available. Cottage cheese and other skim milk cheese and the various skim milk drinks enter directly into consumption.

Nonfat Dry Milk Solids

Consumption

This is a comparatively new commodity. Its manufacture was begun about 1900 on a small scale. Growth was stimulated by the demands of World War I but production still was comparatively small. The output continued to increase during the 1920's and gained more rapidly during the following decade. Production jumped in 1942, in part through a shift from production for feed to production for food on the part of numerous plants, when the shortage of ocean shipping resulted in a great need for a compact nutritious milk product.

Civilian consumption through 1941 showed nearly the same pattern as production in the United States. It increased from an estimated 1 pound per capita in 1932 to 1.9 pounds in 1935-39 and to 2.4 pounds in 1941 (table 17). In 1942 sharp increases in noncivilian needs were nearly matched by increased production and civilian consumption held almost steady, but in 1943 and 1944 only 1.8 and an estimated 2.1 pounds, respectively, were available to civilians.

Most of nonfat dry milk solids is used by the baking industry, but substantial amounts are used in ice cream, in sausage, in confectionery, and in other foods. A trade estimate of distribution among the various uses in 1941 was:

Nonfat Dry Milk Solids Consumed by United States Civilians in 1941

	<u>Million Pounds</u>
Baking industry	200
Prepared flours	10
Ice cream	50
Sausage	23
Buttermilk and cottage cheese	15
Chocolate and flavored milk drinks	11
Chocolate and confections	11
Institutional cooking, soups, etc.	<u>4</u>
Total	324

In contrast to its high food value the price of nonfat dry milk solids is comparatively low. The unit cost of milk nutrients (other than fat) in this form is much lower than in other dairy products, principally because nonfat dry milk solids still is a by-product of butter and fluid cream. Most of the costs of milk production are borne by butter or fluid cream, and the cost of the skim milk for drying is comparatively low.

Demand and Requirements for 1945

It appears that demand for nonfat dry milk solids was practically satisfied in 1941 and nearly so in 1942, but in 1943 and most of 1944 the demand was well in excess of the supply. Late in 1944 the demand for spray process nonfat dry milk solids still was in excess of the limited supplies available to civilians, but the production of roller process had increased to such a degree that none was required to be set aside for military or lend-lease purposes although substantial quantities still were being taken for these purposes. In addition, some roller process nonfat dry milk solids was being purchased by governmental agencies to support the market. The quantities of these products to be available for civilians in the near future will be affected to a considerable extent by the amounts devoted to foreign relief feeding.

Civilian requirements for 1945 have been set at 3.1 pounds per capita, or a total of 408 million pounds (table 19). This amount is larger than the quantity of nonfat dry milk solids consumed in any previous year. It will permit the use of 4 percent nonfat dry milk solids in white pan bread in addition to substantial quantities for other uses.

Whether bakers will be interested in increasing the use of nonfat dry milk solids to the extent indicated may depend in part upon the certainty of obtaining adequate supplies. They are not likely to increase their percentages of this product if they think that future supplies are uncertain. Other deterring factors may be the narrowing margin between ceilings and costs and the difficulty of obtaining appropriate recognition of the value added to the bread by a higher proportion of milk solids.

Condensed Skim Milk

This product is used almost exclusively by food industries -- much of it in the manufacture of ice cream -- although a little is used with cream in the reconstitution of whole milk for use in areas where supplies of fluid milk are inadequate. Its consumption increased from about 2.1 pounds per capita in 1932 to 3.8 pounds in 1941 and to 4.8 pounds in 1943 when condensed skim milk was more profitable than nonfat dry milk solids. With increased utilization of skim milk in other forms the production of condensed skim was reduced somewhat in 1944 and consumption for the year is estimated at 4.1 pounds per capita.

Requirements for 1945

Requirements for 1945 have been placed at 4.2 pounds per capita. The supply of skim milk has been increased materially, and if the manufacture of ice cream should be increased in 1945 it is probable that a larger amount of condensed skim milk will be used.

Cottage and Other Skim Milk Cheeses

Consumption in Recent Years

Consumption of these cheeses has increased considerably with wartime demand and the relative shortages of other cheeses. Consumption in 1932 for all these cheeses was 1.3 pounds per capita; in 1942 and 1943 it was 2.0 pounds (table 17). Under War Food Order 79 the production of cottage cheese and other milk by-products was restricted, together with the limitations on the sale of fluid milk and cream. During the flush season in 1944 the quotas on these cheeses were raised, and with the more favorable situation with respect to nonfat solids they have been removed. Consumption in 1944 is estimated at 1.7 pounds per capita. This figure is smaller than that of 1943, largely because of the restrictions which were in force during much of 1944.

Demand and Requirements for 1945

Cottage and other skim milk cheeses offer a very satisfactory method of utilizing surplus skim milk. The increased need for nonfat dry milk solids and the higher requirements of whole milk cheese were considered in placing the requirement for skim milk cheeses in 1945 at 1.8 pounds per capita (table 19). For the latter half the requirements are expected to cover demand; however, should the demand be higher, a larger production would be desirable.

Buttermilk and Skim Milk Drinks

Consumption in Recent Years

Consumption of buttermilk, chocolate milk, and other skim milk drinks also has increased with the higher incomes and the limited supplies of other milk products caused by the war. Per capita consumption was 52.6 pounds in 1932 and 58.8 pounds in 1943 (table 17). Consumption in 1944 was restricted under War Food Order 79, and at 57.7 pounds per capita, it is estimated to be slightly less than in 1943.

Demand and Requirements for 1945

The demand for these products may fall off should incomes decrease and if nonfat solids are available to a greater extent in other forms. The requirement for these products has been placed at 57.8 pounds per capita (table 19). As with cottage cheese, these products are desirable sources of milk nutrients, and additional consumption would be beneficial for many where other dairy products are not available and where these items are reasonably priced.

FATS AND OILS

(Prepared by George A. Sallee and Charles E. Lee)

Edible

Significance to the Food Supply

Fats and oils are important to the human diet for a number of reasons. Certain fatty acids are essential to growth and maintenance of health. Fats increase the efficiency with which the body uses thiamine, an effect that is especially important for families with diets low in meat. Some fats are important sources of fat soluble vitamins. Butter and fortified margarine provide both fats and vitamins. The use of fats also helps to improve the texture and flavor of many prepared foods, especially the cereals. Fats also make it relatively easy for the body to obtain the necessary number of energy units for they have a high caloric value-- $2\frac{1}{4}$ times that of protein or carbohydrate. For this reason they are particularly important in the diet of heavy workers. They furnish approximately 30 percent of the total calories in an average 3,000 calorie diet and an even larger proportion in high calorie diets.

Consumption in Recent Years

Diets in this country characteristically have contained more fats than those of people in many other parts of the world. This has been true even of diets for low income groups. In fact, the diets of low income families in the Southeast States, particularly those of Negroes, have been high in fat although poor in milk, meat, eggs, fruits, and vegetables. Even during the depression year of 1932 consumption of fats and oils, other than butter, in this country averaged 27.7 pounds per capita (table 21). When butter is included, consumption averaged 45.8 pounds. Following the depression of the early thirties consumption increased until it reached a high of 51.0 pounds per capita in 1941. Because of wartime limitations on supply and the establishment of rationing and other controls, civilian disappearance has declined since 1941, reaching a level of approximately 44 pounds per capita in 1944. At the 1944 level, consumption is only 92 percent of the average for 1935-39.

Demand and Requirements for 1945

Civilian demand for visible edible fats and oils in 1945 is estimated at 16 pounds per capita of butter and 37.9 pounds per capita of other fats and oils, including 2.9 pounds of margarine (fat content), 15 pounds of lard, and 20 pounds of shortening and other edible oils (table 24).

The civilian requirements are directed toward maintaining the wartime level of consumption during the first two quarters and returning to a more nearly pre-war rate of consumption during the last two quarters of 1945. The possibility of reduced noncivilian requirements after the middle of 1945 holds out some hope for larger civilian supplies during the last two quarters. Allocation of no more than the requirement during the first two quarters will require continuation of restrictions on consumption, but availability of the full requirement during the

Table 21.--EDIBLE FATS and OILS: Civilian Per, Capita and Aggregate Annual Consumption for Specified Periods

Item	: 1932	: 1935-39	: 1941	: 1942	: 1943 a/	: 1944 a/
	: 1	: 2	: 3	: 4	: 5	: 6
----- Per capita (pounds) -----						
Margarine (fat content)	1.3	2.3	2.2	2.2	3.2	3.2
Lard	14.3	11.0	14.2	13.6	14.5	14.0
Shortening and other oils	12.1	18.0	18.7	17.0	16.0	15.2
Total	27.7	31.3	35.1	32.8	33.7	32.4
Butter (retail weight)	18.1	16.7	15.9	15.6	11.9	12.0
Total, including butter	45.8	48.0	51.0	48.4	45.6	44.4
----- Aggregate (million pounds) -----						
Margarine (fat content)	166	302	295	297	412	415
Lard	1,795	1,424	1,885	1,797	1,881	1,816
Shortening and other oils	1,509	2,339	2,481	2,242	2,069	1,976
Total	3,470	4,065	4,661	4,336	4,362	4,207
Butter (retail weight)	2,275	2,170	2,105	2,067	1,538	1,550
Total, including butter	5,745	6,235	6,766	6,403	5,900	5,757

a/ Preliminary.

last two quarters of the year should permit relaxation and eventual removal of rationing restrictions and other means of controlling distribution.

The requirement for the first 6 months of 1945 includes a minimum household allowance of one-half pound per capita per week, supplementary allowances for heavy workers and nonhospitalized patients, and limited amounts for industrial and institutional users. It also takes into account the fact that a large proportion of farm-produced butter and lard is consumed on the farm or locally and does not pass through the regular commercial channels of distribution. In total, the requirement will permit consumption at the rate of 44 pounds per capita, annual basis.

The requirement for the last 6 months of the year includes increased allowances for household consumption and for industrial and institutional use as well as provision for consumption out of farm production. It is sufficient to permit civilian consumption at the rate of 49.8 pounds per capita, annual basis.

A summary of the total fats and oils requirement distributed according to use and period is presented in table 22.

Table 22.--FATS and OILS: Distribution of Civilian Requirement according to Use and Period, 1945

Use	Period		
	Jan.-	July-	Entire
	June	Dec.	year
	1	2	3
- - Million pounds, retail basis - -			
Household allowance	1,365	1,630	2,995
Special needs groups (supplementary allowance)	185	165	350
Industrial use	745	792	1,537
Institutional use	320	365	685
Farm-churned butter	125	130	255
Farm-rendered lard	160	210	370
Total requirement	2,900	3,292	6,192

Considering prospective available supplies and past consumption patterns the civilian requirement is distributed among the various food products as shown in table 23.

The civilian per capita and aggregate annual demand and the 1945 requirement, by quarters for each of the various products are shown in table 24.

Table 23.--FATS and OILS: Distribution of Civilian Requirement according to Kind of Product and Period, 1945

Product	Period		
	Jan.-	July-	Entire
	June	Dec.	year
	1	2	3
- Million pounds, retail basis -			
Butter	800	1,032	1,832
Margarine a/	273	200	473
Lard	842	912	1,754
Shortening and oils	985	1,148	2,133
Total	2,900	3,292	6,192

a/ Fat content 218 million pounds for the first half of the year and 160 million pounds for the second half of the year.

Problems of Distribution

The requirements as presented above will permit consumption of fats and oils, including butter, at the average annual rate of 44 pounds per capita in the first two quarters and 49.8 pounds per capita in the last two quarters of 1945. Since these amounts are materially less than the average demand, any general deduction in civilian supply below the indicated requirements will result in the need for increased control over distribution in order to prevent serious maldistribution of the limited supply. A reduction during the first period will call for a general tightening of controls. Likewise, a supply during the last half of the year that is materially smaller than the requirement will call for continuation rather than removal of distribution controls.

The butter requirement for civilians in 1945 is estimated at 14.1 pounds per capita. On this basis the per capita margarine requirement is placed at 2.9 pounds (fat content). At the present time, however, there is some indication the civilian supply of butter in 1945 may be as much as 10 per cent less than the 1944 disappearance of 12 pounds per capita. If such is the case, the amount of margarine consumed by civilians, assuming it is freely available, may be as much as one-half pound above the 1944 level of 3.2 pounds per capita. On the other hand, an increase in the supply of butter for civilians to 12 or even 13 pounds would not raise the supply of butter and margarine together above the estimated demand of 19.6 pounds per capita retail weight and, therefore, probably would result in little if any decrease in the disappearance of margarine below the present level of 3.2 pounds per capita.

The production of lard in 1945 probably will be from 800 to 900 million pounds less than in 1944. With the same noncivilian requirement as in 1944, civilians may obtain the indicated requirement of lard only if present lard stocks are reduced to a minimum working level. Obviously, adequate working stocks of lard should be maintained until it is clear that the end of the war, not only in Europe but in the Pacific area as

Table 24.--EDIBLE FATS and OILS: Civilian Per Capita and Aggregate Annual Demand and Requirement for 1945, by Quarters

Item	Demand		Requirement			
	: Demand :		: Jan.-	: Apr.-	: July-	: Oct.-
	: Total :		: Mar.	: June	: Sept.	: Dec.
	: 1	: 2	: 3	: 4	: 5	: 6
----- Per capita (pounds) -----						
Margarine (fat content)	2.9	2.9	0.9	0.8	0.6	0.6
Lard	15.0	13.5	3.4	3.1	3.1	3.9
Shortening and other edible oils	20.0	16.4	3.7	3.9	4.4	4.4
Total	37.9	32.8	8.0	7.8	8.1	8.9
Butter (retail weight)	16.0	14.1	2.9	3.3	4.0	3.9
Total	53.9	46.9	10.9	11.1	12.1	12.8
----- Aggregate (million pounds) -----						
Margarine (fat content)	377	378	115	103	80	80
Lard	1,950	1,754	440	402	402	510
Shortening and other edible oils	2,600	2,133	480	505	573	575
Total	4,927	4,265	1,035	1,010	1,055	1,165
Butter (retail weight)	2,080	1,832	375	425	520	512
Total	7,007	6,097	1,410	1,435	1,575	1,677

well, is in sight. A critical fat shortage may well continue for some time after the Japanese are driven from the South Pacific area because of the length of time required to restore production. Our stocks of lard should be administered with this in mind.

The civilian use of vegetable oils in making shortening and cooking and salad oils is restricted by present War Food Orders to 1,962 million pounds per year. This rate of production is sufficiently high to cover requirements for the first two quarters, but the quota for the last two quarters would have to be increased beyond the 88 percent currently in effect.

The total civilian requirement of oils for the production of margarine, shortening and other edible oil products is estimated at 2,510 million pounds, fat basis. Noncivilian requirements are now placed at 657 million pounds, with no allowance for relief uses other than that which may be included in the military requirement. The total supply of oils for these products may be no greater than 3,200 million pounds, which is approximately the same as the requirements. There are no excess stocks of these edible oils, and imports of appreciable quantities cannot be anticipated at this time.

If the civilian supply of shortening and oils should fall below the requirement during the first two quarters, or as much as 15 percent below the requirement for the last two quarters, there would be need for the establishment of additional controls over distribution. If noncivilian requirements are reduced in the latter half of 1945, civilians may receive a larger amount of vegetable oil products during the latter half of the year. However, a civilian supply 10 percent greater than the estimated requirement for the latter half of the year probably would provide about all the shortening and oils civilians would take without some price concession.

Inedible--Soap a/

Importance of Soap

Adequate use of soap and the maintenance of a reasonable degree of cleanliness are widely recognized as important aids to the prevention of the spread of infectious diseases. Moreover, in a number of industries where workers must handle toxic materials a sufficient use of soap is an aid in the prevention of dermatitis and other harmful effects. Cleanliness is closely associated with civilian morale, and the provision of adequate supplies of soap, therefore, is of considerable importance from this standpoint.

Consumption in Recent Years

Disappearance of fats and oils in the production of soap for civilians increased rather consistently from 1931 to 1941; but because of a shortage of raw materials induced by the war, it declined during 1942 and the early part of 1943 (table 25).

a/ Includes toilet, laundry, and hand-paste soaps.

Table 25.--INEDIBLE FATS and OILS--SOAP: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

(Fat content)

Item	: 1932 : a/ : 1	: 1935- : 39 a/ : 2	: : 1941 : 3	: : 1942 : 4	: 1943 : b/ : 5	: 1944 : b/ : 6
Per capita (pounds)	11.6	12.1	16.4	13.9	12.7	14.1
Aggregate (million pounds)	1,457	1,566	2,180	1,834	1,645	1,825

a/ Includes an undetermined but very small amount for the armed forces.
b/ Preliminary.

Average annual per capita disappearance was 12.1 pounds in 1935-39, 16.4 pounds in 1941, and 12.7 pounds in 1943. The high level of 16.4 pounds reached in 1941 undoubtedly includes some accumulation of stocks which subsequently were used in 1942 and 1943, and to this extent the per capita figure for 1941 is probably high, while those for 1942 and 1943 are low. Since late 1943, however, larger amounts of raw materials have been made available to the soap manufacturers. Recent allocations have permitted use of fats and oils at a higher rate (14.2 pounds) than in any other year except 1941.

Civilian Requirement in 1945

The fats and oils requirement for civilian soap for 1945 is based on continuation of the per capita supply at a slightly lower level than estimated use in 1944 but approximately 12 percent higher than in 1935-39. While this requirement is lower than consumption in recent war years, except 1943, the amount is believed to be sufficient to prevent serious maldistribution and the resulting need for adoption of some form of soap rationing. The per capita and aggregate requirement, by quarters, is shown in table 26.

Table 26.--INEDIBLE FATS and OILS--SOAP: Civilian Per Capita and Aggregate Annual Requirement for 1945, by Quarters

(Fat content)

Item	: : Total : 1	: Jan.- : Mar. : 2	: Apr.- : June : 3	: July- : Sept. : 4	: Oct.- : Dec. : 5
Per capita (pounds)	13.8	3.5	3.5	3.4	3.4
Aggregate (million pounds)	1,800	456	457	442	445

Problems of Distribution

Variations in consumer needs because of differences in amounts of home laundering, occupations, climatic conditions, and hardness of water; the interchangeability, within wide limits, of one kind of soap for another; and the multiplicity of types of establishments selling soap would make the rationing of civilian soap an extremely difficult and complicated task. Because of these conditions, the policy of the War Food Administration has been to allocate sufficient fats and oils for civilian soap production to maintain reasonably equitable distribution without adoption of soap rationing.

GRAINS

(Prepared by W. S. Baxter)

Wheat

Significance to the Food Supply

Wheat is preferred to other cereals by the greater part of the population, as the high consumption clearly indicates. Since the food habits of Americans have singled out highly milled wheat flour in preference to whole wheat, white bread and flour have been enriched to secure better nutrition. The increments to enrichment levels bring about a substantial improvement in the ordinary diet. With an average consumption of 145.9 pounds of white flour per capita the nutrients added through enrichment supply about one-fifth of the daily supply of thiamine, one-sixth of the iron and niacin, and approximately one-eighth of the riboflavin.

Consumption in Recent Years

Wheat is used principally for seed, feed and food, with the latter accounting for one-half to two-thirds of the total. Ordinarily, only a small portion of the wheat supply is used for industrial purposes such as: starch in the laundry and textile industries, flour for core binder in foundries, paste for bookbinding and paper-hanging, and the raw material for the manufacture of alcohol and potable spirits. In the past year, unusually large quantities of wheat have been used for alcohol and animal feed.

Consumption of wheat flour, both per capita and aggregate (tables 27 and 28) has shown a sharp downward trend from 1909 to 1933 due primarily to changes in the American diet. During the period 1933 through 1940 the trend flattened out, but since 1940 consumption has shown a sharp upward trend. This increase is attributed to the shortage of other foods and to the increase in number of lunches carried.

The trend for wheat breakfast foods has been gradually upward since 1909.

During the 5-year period 1935-39, about 38 percent of domestic flour consumption was in the form of bakery flour, 6 percent in the form of biscuits, crackers, and pretzels, 8 to 9 percent in institutional use, and about 46.5 percent sold as family flour. In 1943 the bakery flour increased to 46.5 percent, biscuits, etc., to 7.2 percent, institutional use to 16.1 percent, and family flour decreased to 30.2 percent of total domestic consumption.

Demand and Requirements for 1945

With a reduction in heavy industrial production and somewhat more plentiful supply of other foods for civilians in 1945, the per capita demand

Table 27 --CEREALS: Civilian Per Capita Annual Consumption for Specified Periods a/

Item	: 1932 :	: 1935-39 :	: 1941 :	: 1942 :	: 1943 :	: 1944 <u>b/</u>
	: 1 :	: 2 :	: 3 :	: 4 :	: 5 :	: 6 :
	-Pounds <u>c/</u> -					
Wheat <u>d/</u>	225.1	221.4	217.1	219.5	225.9	226.4
Flour	221.0	217.1	212.7	215.0	221.5	222.0
White	211.0	207.5	202.1	203.0	208.0	208.4
Whole	3.5	3.1	2.9	3.0	3.1	3.1
Semolina	6.5	6.5	7.7	9.0	10.4	10.5
Cereals	4.1	4.3	4.4	4.5	4.4	4.4
Corn <u>d/</u>	61.5	56.3	61.9	72.0	67.4	66.3
Meal and flour	36.8	33.2	31.5	31.7	33.5	33.4
Hominy and grits	1.8	2.4	3.0	3.5	3.5	3.6
Cereal	4.5	3.2	4.3	4.7	4.9	4.7
Starch	1.6	2.1	2.4	2.3	2.6	2.5
Sirup	7.9	10.5	11.8	19.5	14.3	13.8
Sugar	8.9	4.9	8.9	10.3	8.6	8.3
Rye	4.0	3.2	4.2	4.8	4.9	5.0
Barley <u>d/</u>	5.3	1.7	1.8	1.9	2.3	2.3
Oats <u>e/</u>	11.5	9.5	9.7	11.0	11.6	11.4
Soya beans for flour, etc.	<u>f/</u>	.2	.4	.5	1.2	1.3
Buckwheat	.6	.4	.3	.3	.3	.5
Grain sorghum	---	---	---	---	---	1.5
Rice, milled <u>g/</u>	6.0	5.8	5.6	6.5	5.8	6.1
Peanuts for flour	---	---	---	---	<u>f/</u>	.1
Cottonseed for flour	---	---	---	---	<u>f/</u>	.1

a/ Based on data from the National Food Situation, U. S. Department of Agriculture.

b/ Preliminary.

c/ Primary distribution weight.

d/ Does not include grain used in fermented malt beverages.

e/ Calculated on the basis of field run oats, 13.2 pounds of oatmeal per bushel of oats.

f/ Practically none.

g/ Includes heads, second heads, and screenings used in fermented malt beverages. Data for 1932 through 1943 on marketing year basis rather than calendar year.

Table 28 --CEREALS: Civilian Aggregate Annual Consumption for Specified Periods a/

Item	: 1932	: 1935-39	: 1941	: 1942	: 1943	: 1944 b/
	: 1	: 2	: 3	: 4	: 5	: 6
- - - - - Million bushels c/ - - - - -						
Wheat d/	471.1	478.9	480.0	484.0	488.0	488.0
Flour	462.5	469.6	470.3	474.1	478.5	478.5
White	441.6	448.8	446.9	447.6	449.3	449.2
Whole	7.3	6.7	6.4	6.6	6.7	6.7
Semolina	13.6	14.1	17.0	19.9	22.5	22.6
Cereals	8.6	9.3	9.7	9.9	9.5	9.5
Corn d/	137.9	130.5	146.6	170.1	156.0	153.1
Meal and flour	82.5	76.9	74.6	74.9	77.5	77.1
Hominy and grits	4.0	5.6	7.1	8.3	8.1	8.3
Cereal	10.1	7.4	10.2	11.1	11.4	10.8
Starch	3.6	4.9	5.7	5.4	6.0	5.8
Sirup	17.7	24.3	27.9	46.1	33.1	31.9
Sugar	20.0	11.4	21.1	24.3	19.9	19.2
Rye	9.0	7.4	10.0	11.3	11.3	11.5
Barley d/	13.9	4.6	5.0	5.2	6.2	6.2
Oats e/	45.0	38.3	40.2	45.5	47.0	46.1
Soya beans for flour, etc.	f/	.5	.8	1.1	2.5	2.7
Buckwheat	1.5	1.0	.8	.8	.8	1.3
Grain sorghum	---	---	---	---	---	3.5
- - - - - Million pounds c/ - - - - -						
Rice, milled g/	753.4	752.7	742.9	860.0	751.8	789.0
Peanuts for flour h/	---	---	---	---	f/	18.6
Cottonseed for flour	---	---	---	---	f/	18.0

- a/ Based on data from the National Food Situation, October 1944.
- b/ Preliminary.
- c/ Primary distribution weight.
- d/ Does not include grain used in fermented malt beverages.
- e/ Calculated on the basis of field run oats, 13.2 pounds of oatmeal per bushel of oats.
- f/ Practically none.
- g/ Includes heads, second heads and screenings used in fermented malt beverages. Data for 1932 through 1943 on marketing year basis rather than calendar year.
- h/ Farmers stock.

for wheat is expected to decline slightly. This decrease will be reflected primarily in the use of white flour. A decrease in national income will cause a decrease in the use of bakery goods, particularly sweet breads, cakes, and pastries. Demand for semolina products is expected to remain at the level of the past 2 years and wheat breakfast foods at the same level which has been maintained the past 5 years.

The requirement for wheat (excluding that used in fermented malt beverages) is designed to meet in full the estimated 1945 demand. It has been fixed at 484 million bushels, or an average of 223.4 pounds per capita (table 29). This is 3 pounds per capita below the estimated 1944 consumption.

Per capita consumption of wheat products does not show any seasonal variation. The aggregate quarterly requirements, therefore, are influenced only by changes in population and the forces which affect the general trend in consumption. Wheat products can be stored readily and a definite seasonal pattern of processing has developed in the wheat milling industry. In recent years milling has been much heavier in the fall and winter months than during the spring and summer. Total wheat requirements per quarter have been established on the basis of the seasonal milling pattern, whereas quarterly requirements for the individual wheat products follow the pattern of consumption (table 30).

Problems of Distribution

The total prospective supply of wheat, without imports, is expected to be 801 million bushels for the first half of 1945. With estimated use, during this period, of 95 million bushels of wheat for feed, 23 million bushels for seed, 46.2 million bushels for alcohol and other industrial uses, the supply will be adequate to meet the civilian demand for food (table 29), provide for the stated requirements for military and export use, and leave adequate stocks at the close of the marketing year. Stocks of flour on hand July 1, 1945, will be sufficient to meet all needs until the new 1945 crop of wheat is milled. It is expected that supplies of feed grains will be adequate to meet demands for feed without using greater than normal quantities of wheat for feeding purposes. Since supplies of wheat in the United States are more than adequate to meet the demand for this grain for all purposes until the new crop is harvested, no distribution problems will be encountered before next fall. It is impossible at this time to predict whether or not there will be a surplus of wheat after the 1944-45 crop is harvested. With average yields on the 1945 wheat goal acreage all estimated needs will be filled and there will be adequate year-end carryover. However, a record per acre yield such as we had this year could produce a surplus which might have to be disposed of through an export subsidy program or by other means. Supplies of wheat in the four principal exporting countries on July 1, 1945, are expected to be below the record high of 1,750 million bushels on July 1, 1943, but greatly above the 1935-39 average of 457 million bushels, and it is probable that the world price of wheat will be considerably below the supported domestic price.

Table 29 --CEREALS: Civilian Demand and Requirement, 1945

Item	Per Capita		Aggregate	
	: Require-		: Require-	
	: Demand		: Demand	
	1	2	3	4
	-- Pounds a/ --		Million bushels a/	
Wheat b/	223.4	223.4	484.0	484.0
Flour	219.0	219.0	474.5	474.5
White	205.5	205.5	445.3	445.3
Whole	3.1	3.1	6.7	6.7
Semolina	10.4	10.4	22.5	22.5
Cereals	4.4	4.4	9.5	9.5
Corn b/	73.7	69.3	171.1	160.8
Meal and flour	33.5	33.5	77.7	77.8
Hominy and grits	3.5	3.5	8.1	8.1
Cereal	4.8	4.8	11.1	11.1
Starch	2.5	2.5	5.8	5.8
Sirup	19.1	16.7	44.4	38.8
Sugar	10.3	8.3	24.0	19.2
Rye	4.9	4.9	11.4	11.4
Barley b/	2.3	2.3	6.2	6.2
Oats	11.4	11.4	46.3	46.3
Soya beans for flour & grits	2.2	2.2	4.8	4.8
Buckwheat	.4	.4	1.0	1.0
Grain sorghum	1.4	1.4	3.5	3.5
-Million pounds a/-				
Rice, milled	6.5	6.2	845.0	806.0
Peanuts for flour c/	.1	.1	18.6	18.6
Cottonseed for flour	.1	.1	18.0	18.0

a/ Primary distribution weight.

b/ Does not include grain used in fermented malt beverages (see table 31).

c/ Farmers stock.

Corn

Significance to the Food Supply

Corn is especially important as a food in the South where large quantities are consumed in the form of grits, pone, and bread. In that part of the country the use of corn is firmly established in food habits. Corn meal is a very good and cheap source of calories and supplies fair amounts of protein and iron.

Consumption in Recent Years

It is estimated that less than 7 percent of the corn crop is used for food. About 4.5 percent is used for industrial nonfood purposes, and about 0.5 percent for seed. Approximately 88 percent of the crop is used for livestock feeding. The quantity of grain going into products for civilian food consumption has had an upward trend since 1935. Prior to that time the trend was upward through 1929, but showed a marked downward trend for the next 6 years.

The per capita consumption of corn meal and flour showed a general downward trend to 1935 but since that time it has leveled off and fluctuated around the level of 33 pounds per capita.

The trend for per capita consumption of hominy and grits has been generally upward, whereas that for breakfast cereals followed the pattern of total corn product consumption to 1935 and has shown a steady upward trend since that time.

Civilian food consumption of corn starch fluctuated around 2 pounds per capita up to 1938; since that time the trend has been upward.

Consumption of corn sirup in grain equivalent fluctuated around 10 to 11 pounds per capita up until 1942, at which time it rose to 19.5. This large increase was due to the scarcity of other sweeteners. The high level of consumption would have continued during 1943 and 1944 had it not been for the shortage of corn for milling and the increased demand for wet milling products for industrial uses. In these two years the demand for corn sirup for civilian food purposes was considerably greater than could be filled because of the short supply.

Per capita civilian consumption of corn sugar increased steadily until 1928 and declined sharply to a low in 1935. Since that time the trend has been steadily upward to the high point of 10.3 pounds per capita in 1942. During 1943 and 1944 consumption has been lower due to limited supply.

Demand and Requirements for 1945

The 1944 corn crop was the largest on record. Production of other feed grain crops has also been very favorable. It, therefore, does not appear

likely that a shortage of corn for processing will develop as it has in the past two years. These shortages were due to unusually large feed requirements and to price relationships which caused corn to remain on farms. The number of hogs on farms is expected to be lower in 1945 than in 1943-44, the support price on hogs has been lowered and although the total feed grain supply is somewhat less than the corresponding supply in 1943-44, the supply per animal unit for 1944-45 probably will be materially larger than in the past feeding year. Hence, supplies of corn available for milling should be adequate to meet demands.

Demand for corn meal and flour is expected to be at about the level of 1943 and 1944 or 33.5 pounds per capita. For hominy and grits, and corn breakfast cereal demand is expected to be about the same as in 1944 and per capita demand has been set at 3.5 and 4.8 pounds, respectively. Demand for starch for food has been estimated at 2.5 pounds per capita or the same as 1944 consumption.

Both corn sugar and corn sirup are used extensively in the confection industry and in commercial bakery products. In certain types of candy and icing for bakery goods corn sweeteners are preferred to other types of sweeteners because of their effect upon texture, flavor, and appearance. In ice cream manufacture corn sugar has distinct advantages over cane or beet sugar. Its lower sweetening power prevents over-sweetness and it produces a finer, creamier texture.

It is estimated that the demand for corn sirup and sugar in 1945 will be respectively 19.1 and 10.3 pounds per capita. It is not expected, however, that the supply available for civilian food will be adequate to meet these demands.

Civilian food requirements for corn have been established at 161 million bushels, which is the equivalent of 69.3 pounds per capita. These requirements meet in full the demands for all dry milling corn products, but are below full demand for wet process corn milling products. Capacity of the wet process industry, due to present labor shortages, is not adequate to meet the total present demand for civilian food; industrial starches, sugars, etc; military requirements; and export requirements. It is estimated that wet process products equivalent to about 64 million bushels of grain will be available for civilian food in 1945. While this is considerably below the estimated demand of 74 million bushels it is greater than the 57 million bushels consumed in 1944 and the 59 million bushels consumed in 1943. It is not practical at this time to greatly expand processing facilities to meet the present demand, since the demand for industrial starches, etc., will decrease as the war nears its end and civilian food demands will decrease as more cane and beet sugar becomes available to them.

Problems of Distribution

Since the supply of all corn food products except corn sugar and syrup will be adequate to meet demand no distribution problems are anticipated. In spite of the short supply of corn sweeteners reasonably equitable distribution can be expected through voluntary cooperation of the corn processors. Such controls proved satisfactory during 1943 and 1944 when the supply of corn sweeteners was far shorter in relation to demand than it will be in 1945.

In spite of the record corn production in 1944 no surplus problem is expected in 1945 due to the fact that the 1944 carryover was the smallest in 5 years and the rate of feeding per animal is expected to be higher than in the 1943-44 feeding year.

Rice

Significance to the Food Supply

The food habits of certain sections of the population have established rice as an integral part of the diet peculiar to them. Rice is consumed in large quantities by the people of the southeastern coastal plain and by persons of Oriental or Spanish-American ancestry. It is the necessity for supplying these groups with sufficient quantities of rice that must be considered in discussing the significance of this commodity as it is difficult to change the consumption habits of the groups which depend upon rice as a dietary staple. Hence, shortages in the areas in which they live are likely to produce real dissatisfaction. In other areas and among other population groups rice is used primarily for variety and as a substitute for potatoes. Shortages in these areas are not likely to have serious repercussions so long as substitutes remain in good supply.

Consumption in Recent Years

Over the past 25 years the trend of per capita rice consumption has been slightly upward. In recent years the normal demand has been 6 pounds per capita or over. The short crop in 1941 and increased requirements of the military services and for export created such a short supply available for civilian use that consumption fell to 5.6 pounds per capita in that marketing year. In the marketing year 1943 consumption was also low due to the limited supply available to civilians. The low average annual per capita consumption of rice does not reflect the importance of rice in the diet in certain sections of the country. On a State basis the average per capita consumption of rice ranges from less than one-tenth pound in New Hampshire and Vermont to 27 pounds in South Carolina and over 40 pounds in Louisiana.

Demand and Requirements in 1945

Rice is a cheap food and in certain areas is used as a substitute for, or as a supplement to other scarce or more expensive foods. In areas where rice is an integral part of the diet, increases in income appear to produce increases in per capita consumption of rice. This seems to indicate that during periods of lower national income the poor people in the rice eating areas are not financially able to fill their requirement for even this cheap food. As they get more money they buy more rice rather than turning to more expensive foods.

It is estimated by some that civilian demand in 1945 would reach 9 million pockets, or an average of 7 pounds per capita, if the supply were adequate. A demand of 6.5 pounds per capita, however, is believed to be more realistic. This is the quantity consumed in 1942. It is not believed that any decline in national income during the last half of 1945 will be sufficient to reduce demand for rice below 6.5 pounds per capita.

Requirements have been set at 6.2 pounds per capita or 806 million pounds of milled rice. This is the quantity of rice that will be needed to insure orderly and equitable distribution.

The consumption of milled rice is much heavier during the winter months than during the spring and summer. Normally, the quarterly civilian disappearance of milled rice is about as follows:

	<u>Percent</u>
January-March	31
April-June	15
July-September	12
October-December	42

On this basis the quarterly requirements would be:

	<u>Million Pounds</u>
First quarter	250
Second quarter	120
Third quarter	100
Fourth quarter	336
Total 1945	806

Problems of Distribution

Rice is produced in Louisiana, Arkansas, southeastern Texas, and California. The regions of major consumption besides these states are South Carolina, Florida, and Georgia. Due to the wide variation

in per capita consumption between regions and even within regions (ranging from 0.1 to over 100 pounds), rationing of rice is not feasible.

In an attempt to get rice distributed equitably on the basis of normal consumption, the original WFO-10 provided State quotas for the shipment of rice to civilian trade. These quotas applied to rice shipped by first owners only, since it would have been too difficult to enforce if it applied to all distributors. The State quota system proved to be ineffective as a means of controlling distribution and, therefore, has been eliminated from the present revised order.

As a result of price regulations and the restrictions under the set-aside order, toll milling greatly increased and many persons who formerly functioned in another capacity set themselves up as primary distributors. These practices upset the normal and orderly distribution of rice. Second Revised Maximum Price Regulation 150, issued September 6, 1944, "freezes" the persons who function as primary distributors to those who functioned as such during the period from April 28, 1941 to April 28, 1942 and limits the amount of rice sold by them to the quantity they sold during that period. This OPA regulation also limits the amount of rice toll milled for civilian and export trade to the amount so milled during the period April 1, 1941 to April 1, 1942. This action will help prevent circumvention and evasion of the Government controls and will tend to restore normal distribution practices. However, successful distribution of rice to the areas where it is needed will have to depend primarily upon voluntary cooperation on the part of millers and primary distributors.

Due to very large military requirements for rice, which include relief feeding in the Pacific, and large commitments to Cuba, it is doubtful that the supply of rice will be adequate to meet civilian demand at any time during the year 1945. The requirements of the allied and friendly countries exceed supplies available to these countries. Some rice may be available in the Philippine Islands when they are liberated. However, adequate supplies will not be available until Burma is liberated and then only if the Japanese do not destroy the rice supplies and rice fields in their retreat from this area.

The supply of rice which will be available to civilians in 1945 is estimated at 7.3 million bags or .2 million bags less than was consumed by civilians during the past year. However, it is probable that during the first half of 1945 civilians will receive 3.3 million bags of rice compared with the 2.9 million bags which they received during the corresponding period in 1944. On a per capita basis the figures would be 2.6 pounds compared to 2.3 pounds in the first half of 1944.

If civilians are to receive in 1945 the 806 million pounds needed to insure equitable distribution and to eliminate the unbalanced distribution which has existed for the past two years, it will be necessary that all other claimants, excluding the military, be cut 20.5 percent below their requirements. Such a cut would be impossible for some claimants

due to previous commitments by the United States Government. The major claimants other than civilian and military are Cuba and the United States Territories.

The Army is buying and stockpiling rough rice for civilian feeding in liberated areas in the Pacific. Since it is easier to store rice in the rough state, the rice will not be milled until it is needed. If the need for milling this rice for relief should be concentrated within a few months many United States mills might be unable to mill any for civilians during that time. If this situation arises in the late spring or early summer it will have no serious effect on the civilian supply of rice. Should it come in the fall when the new crop would normally reach the mills, the civilian rice situation might become acute, for stocks of milled rice would be very low and no new crop rice would be available for civilian consumption.

Rye

Consumption in Recent Years

Rye is used principally as flour in breads and crackers. In certain areas, particularly the North Central States and New England it is used as a breakfast food in the form of farina and rye flakes. Rye adds variety to the diet and supplies about the same nutrients as whole wheat.

Consumption of rye flour declined from a high of 7.7 pounds per capita (retail weight) in 1918 to a low of 2.1 pounds per capita in 1935. Since that time the trend of per capita consumption has been upward.

Demand and Requirements for 1945

Demand for rye food products in 1945 is expected to remain at about the same level as in 1943 and 1944.

Although the crop of rye harvested during the summer of 1944 is very short, being 32 percent below the average 10-year (1933-42) production, it is expected that the supply will be adequate to meet civilian demand for the first half of 1945. Requirements for rye for industrial alcohol and for feed during the 1944-45 marketing year have been reduced below last year's use, thus leaving a larger proportion of the crop available for food. The requirements for the last half of 1945 will be filled principally from the 1945-46 crop.

Requirements (table 29) have been designed to meet in full the estimated demand of 11.4 million bushels or an average of 4.9 pounds per capita.

Oats

Consumption in Recent Years

Less than 4 percent of the domestic disappearance of oats goes for food purposes, the principal use being for livestock feed. Oats, when consumed by humans, are usually in the form of oatmeal, which is a cheap and nourishing food. Oatmeal adds variety to breakfast cereals and supplies somewhat more of several nutrients than the other grains. Its principal food use is breakfast food, but in recent years due to

advertising campaigns and somewhat to the shortage of certain foods, oatmeal is being used more extensively in cookies and as a "meat extender" in meat loaves, patties, and croquettes. Per capita consumption of oatmeal has been increasing since 1935. (see table 27)

Demand and Requirements for 1945

Demand for oats for food is expected to be 11.4 pounds per capita in 1945 or the same as consumption in 1944.

Oats for food use must be of high quality and carefully selected. They therefore bring a higher price than oats for feed, and consequently there should be no difficulty in moving the required amounts of this grain off farms, if grain of the proper quality can be found. Since the supply is expected to be adequate to meet civilian demands, the requirement for oats has been designed to equate demand and supply in 1945 and is set at 46.3 million bushels, or an average of 11.4 pounds per capita (table 29).

Buckwheat

Consumption in Recent Years

Although buckwheat products have long been considered excellent foods, both for human beings and for animals, it is a minor crop compared with corn, oats, or wheat. Production of buckwheat has never exceeded 15-1/4 million bushels, and during the past 15 years has ranged between 6 and 9 million bushels. Less than one-third of the crop is used for food purposes. Buckwheat flour is used mainly for making griddle cakes. It is also compounded with flours of other grains to make a prepared pancake flour mixture. A comparatively small quantity of buckwheat is milled into groats from which two types of foods are made: roasted kernels and farina. These are used in soups, as porridge, and occasionally as breakfast food. Approximately two-thirds of the total United States buckwheat crop is grown in New York and Pennsylvania. These states also comprise the area of heaviest buckwheat consumption. Part of the buckwheat used for food is custom milled and used on the farms where it is grown. The quantity thus used has decreased steadily from 728 thousand bushels in 1919 to 114 thousand bushels in 1942. This appears to be about the minimum to which the farm use will decline. Commercially milled buckwheat flour has also been declining. In the 10-year period 1929 to 1939, the buckwheat flour production dropped from 38.5 million pounds to 22.6 million pounds.

Demand and Requirements for 1945

Although there was a sharp rise in the per capita consumption of buckwheat in 1944 (table 27) it is expected that consumption will drop in 1945 to about the 1935-39 level of 0.4 pound per capita.

The 1944 crop of buckwheat produced 9.1 million bushels of grain. This is the largest crop since 1928 and is over 2 million bushels larger than any crop since 1935. In that year with a supply of about 8.5 million bushels of buckwheat, 0.9 million bushels were used for civilian

food purposes. Therefore, unless unusually large amounts of buckwheat are diverted to feed purposes, the supply should be more than adequate to meet the demand for the grain for food purposes. The requirement for buckwheat has been designed to equate demand and supply in 1945 and is set at 1 million bushels, or an average of 0.4 pound per capita (table 29).

Soya Flour and Grits

Significance to the Food Supply

Soybean products furnish efficient protein in a very economical form and are valuable also as sources of iron and the B vitamins (thiamine, niacin, and riboflavin).

Soy products are comparatively new arrivals on the American table, but they have a wide range of possible uses. Of the 1943 civilian food use of soya flour, grits, and flakes, about 38 percent was used in bakery products such as bread, doughnuts, crackers, etc; 32 percent in meat processing; 22 percent for direct household use; 9 percent in cereal preparations and candy; and less than one-tenth of a percent in macaroni and other paste products. With sufficient promotional activity by commercial and governmental agencies, it should not be difficult to increase consumption. Higher consumption is advantageous, particularly because of the riboflavin and other B vitamins that would be supplied in this way. Riboflavin is frequently a limiting factor in the total diet, especially in low income groups where milk consumption is low.

Consumption in Recent Years

Civilian consumption of soya flour, flakes and grits has increased substantially over the past few years (see table 28), and an effort is being made through advertising and educational campaigns to further increase consumption of soya products. The progress that has been made has been neither as rapid nor as continuous as was desirable or has been expected. Further progress will depend principally upon the development of products with taste appeal. Work is being carried on by processors to improve the color, texture and flavor of their products and the rate of increase in consumption of soya products will depend on the success achieved through this work.

Demand and Requirements for 1945

The amount of soya products that will be consumed during 1945 is estimated to be 200 million pounds, of which one-third to one-half will be full fat flour. Supplies of beans are adequate to meet the demand for milling into full fat flour and the supply of meal is far in excess of the food demands for low fat flour.

Requirements have been set at the estimated demand of 2.2 pounds per capita or 4.8 million bushels of beans. This is equivalent to 200 million pounds of flour and grits, retail weight. The uses of soya flour and grits are expected to be somewhat as follows;

<u>Use</u>	<u>Million Pounds</u>
Bread, crackers, doughnuts, and other bakery products	80
Ground meat products	55
Household and institutions	40
Cereal and prepared flour mixes.	15
Candy manufacture	<u>10</u>
Total	200

There is no evidence to indicate a seasonal variation in the consumption of soya products. Since increased use of the product is dependent principally upon an educational campaign, it is probable that consumption will be successively larger each quarter. Since the rate of increase in consumption is indeterminable, and since the product can be stored satisfactorily, it will be desirable to make equal allocations for each quarter (table 30).

Peanut Flour

Peanut flour is a comparatively new product used principally by the baking industry. The flour is produced by a few mills in the South with an estimated capacity of 6,000 tons per year. It is not expected that equipment will be made available until after the war to increase the milling capacity. At the present time the entire output of the mills is used for civilian food. There is a limited distribution for home consumption in Alabama, and the remainder of the production goes into bakery goods.

Civilian requirements for peanut flour have been set at the present milling capacity of 12 million pounds of shelled peanuts or 18.6 million pounds farmers stock.

Cottonseed Flour

Cottonseed flour is a new product produced by only one mill which is located in Texas. The products of the mill are used only by the baking industry. One product "cina-coa", a roasted cottonseed flour, is used with oil of cashew to make a substitute for cinnamon and used with vanilla extract to make a substitute for cocoa. The unroasted

Table 30.--CEREALS: Civilian Requirement by Quarters, 1945

Item	: Jan.-	: Apr.-	: July-	: Oct.-
	: Mar.	: June	: Sept.	: Dec.
	: 1	: 2	: 3	: 4
----- Million bushels -----				
Wheat <u>b/</u>	121.5 <u>c/</u>	112.0 <u>c/</u>	121.0 <u>c/</u>	129.5 <u>c/</u>
Flour	118.0	118.3	118.7	119.5
White	110.8	111.0	111.4	112.1
Whole	1.6	1.7	1.7	1.7
Semolina	5.6	5.6	5.6	5.7
Cereal	2.4	2.3	2.4	2.4
Corn <u>b/</u>	40.0	40.1	40.2	40.5
Meal and flour	19.4	19.4	19.4	19.6
Hominy and grits	2.0	2.0	2.0	2.1
Cereal	2.7	2.8	2.8	2.8
Starch	1.4	1.4	1.5	1.5
Sirup	9.7	9.7	9.7	9.7
Sugar	4.8	4.8	4.8	4.8
Rye	2.8	2.8	2.9	2.9
Barley <u>b/</u>	1.5	1.5	1.6	1.6
Oats	11.5	11.6	11.6	11.6
Soya beans for flour & grits	1.2	1.2	1.2	1.2
Buckwheat	.2	.2	.3	.3
Grain sorghum	.8	.9	.9	.9
----- Million pounds <u>a/</u> -----				
Rice, milled	250.0	120.0	100.0	336.0
Peanuts for flour				
(farmers' stock)	4.6	4.7	4.6	4.7
Cottonseed for flour	4.5	4.5	4.5	4.5

a/ Primary distribution weight.

b/ Does not include grain used in fermented malt beverages.

c/ Quarterly breakdown of wheat products is on the basis of estimated consumption and does not add up to the total for wheat, which is broken down by quarters on the basis of wheat milling. Total consumption for the year, however, equals the milling for the year. On December 31, 1944, there will be a carryover of flour available for civilian consumption of about 7 million bushels (grain equivalent).

flour is used in the baking industry in place of egg yolk in cakes and cookies. The grinding capacity of the mill is about 9,000 tons of cottonseed per year, and civilian requirements for 1945 have been set at this quantity.

Grain Sorghum

The early white settlers in the semiarid regions of the United States depended heavily on grain sorghums as an important source of food, especially in years of severe drouth when corn and wheat failed. Since then, however, grain sorghums have been used little in the American diet.

Although grain sorghum may be used for food in the form of flour in baking, or as a breakfast cereal in the form of grits, at the present time it is used principally in the form of waxy starch as a substitute for tapioca in pudding mixes. The commercial use of sorghum grain in the manufacture of waxy starch was begun in 1942, but no data are available on the quantity produced or used. However, from reports from one large manufacturer, it is estimated that about three and a half million bushels of grain sorghum will be used in the coming year in the manufacture of tapioca substitute, for use principally in pudding mixes.

The production of grain sorghums for the 1944-45 crop year is estimated to be 150 million bushels, of which 3.5 million bushels will be used for food, 37 million bushels will be used for industrial purposes, and the remainder will be used for feed.

The supply will be adequate to meet all demands for sorghum grain including the greatly expanded requirement for the alcohol program.

Grain for Fermented Malt Beverages

Although fermented malt beverages are not strictly a food, the requirements for grain for this purpose are included since the grain will be taken from the civilian supply.

Production of fermented malt beverages has increased from 37.7 million barrels in 1934 to 70.7 million barrels in 1943. Demand during 1945 is expected to greatly exceed 71 million barrels. Production, however, is limited due to War Food Order 66 which places restrictions on the use and delivery of malted grain and malt syrup. Under this order any large brewer is limited to the use of 93 percent of the quantity of malted grain or malt syrup which he used for brewing purposes during a corresponding period of the base year, March 1, 1942 to February 28, 1943. A small brewer is limited to 100 percent of the quantity of malted grain or malt syrup which he used in the base period.

Requirements for grain for fermented malt beverages have been set slightly above the quantities used in the calendar year 1943, as the brewers are producing more beer with a smaller proportion of malt. These requirements are as follows: Barley, 65 million bushels; corn, 19 million bushels (including the grain equivalent of cornstarch, corn sugars and syrups, purchased for brewing); and wheat, 1.0 million bushels. The quarterly requirements are shown in table 31. Milled rice used for brewing has not been separated from the requirements for table rice since it is difficult to tell how much screenings and second head rice brewers will use. Total rice used by brewers is expected to be about 1.7 million bags. It is estimated that half of this quantity will be brewers rice which is not under allocation, and the remaining quantity will be second heads and screenings which are under allocation. The estimated requirements for milled rice take into consideration the portion of the second heads and screenings which ordinarily is used for brewing.

Table 31 --GRAINS for FERMENTED MALT BEVERAGES a/: Civilian
Aggregate Annual Requirements by Quarters, 1945

Item	: Jan.-	: Apr.-	: July-	: Oct.-
	: Mar.	: June	: Sept.	: Dec.
	: 1	: 2	: 3	: 4
- - - - - Million bushels b/ - - - - -				
Barley	14.5	16.8	17.5	16.2
Corn	4.5	4.5	4.9	5.1
Wheat	.3	.2	.2	.3
- - - - - Million pounds b/ - - - - -				
Rice (Brewers)	23.0	21.2	18.7	22.1

a/ Not included in food uses in table on civilian per capita and aggregate annual requirements for 1945.

b/ Primary distribution weight.

SUGARS AND SIRUPS
(Prepared by Isabelle I. Kelley)

Significance to the Food Supply

Sugars and sirups are an essential part of our dietary pattern. They are useful as a source of energy and they contribute to the palatability of other nutritious foods. The national food program is based upon making continuously available plentiful supplies of cereal products since these are nutritious food available in relative abundance and are the items most commonly consumed by all segments of the population. Adequate supplies of sugars and sirups are necessary to insure the production of cereal products palatable enough to guarantee consumption. Cane and beet sugar, corn sugar, corn sirup, and honey have important industrial uses, such as in the canning of fruits, in the manufacture of preserves, and in commercial bakery products.

Cane and Beet Sugar

Consumption in Recent Years

There has been a remarkable increase in the per capita consumption of refined sugar in the past century. This upward trend was interrupted by slight declines in consumption during World War I and an economic recession in the early twenties. Sugar consumption during the 1930's followed the trend of national income, declining from 108 pounds per capita in 1929 to a low of approximately 91 pounds in the middle thirties, then increasing until the economic recession in 1937-38. The outbreak of World War II stimulated a wave of sugar hoarding which increased apparent consumption in 1939. In 1941 consumption jumped to 103.6 pounds per capita, but with the difficulties involved in maintaining a steady flow of imports, the loss of sugar from the Philippines, and the need for the use of sugar in the production of industrial alcohol, civilian supplies were well below pre-war levels in 1942, 1943, and 1944.

With civilian demand for sugar at a record high level, rationing controls were established in May 1942 to insure that all civilian groups would have access to their share of the reduced supply. With the improvement in the rate of sugar arrivals from offshore areas and because we drew upon stocks in this country, in 1944, more sugar was distributed to civilians than in 1943 (table 32). Larger quantities have been used in 1944 than in 1943 for both home and commercial canning and preserving and allotments to industrial users have been higher for the year as a whole. During the late summer, when demand was at its seasonal peak, distribution of sugar was spotty and shortages developed. While fairly adequate supplies of raw sugar were available, refineries were faced with labor shortages and their production of refined sugar could not keep pace with the demand.

Table 32.--CANE and BEET SUGAR: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	Apparent civilian consumption					
	1932	1935-39	1941	1942	1943	1944
	1	2	3	4	5	6
- - - - - Per capita (pounds) - - - - -						
Cane and beet sugar a/	94.7	96.5	103.6	86.2	82.1	88.1
-Aggregate (Thousand short tons, raw value) -						
Cane and beet sugar	5,870	6,700	7,350	6,102	5,687	6,100

a/ Refined basis

Demand and Requirement for 1945

It is estimated that civilians would purchase 7,400,000 tons of cane and beet sugar in 1945, if this large amount could be made available (table 33). While this would be slightly above the previous peak year (1941), it is below the estimate of civilian demand in 1944. It is likely that the expected decline in national income will have some adverse effects upon the demand for many manufactured sugar-containing products, such as candy and soft drinks. However, since national income will remain at relatively high levels, industrial users would absorb record quantities of sugar in 1945, if large enough supplies could be made available to permit unrestricted distribution.

Table 33.--CANE and BEET SUGAR: Civilian Demand and Requirement, 1945

Item	Per capita a/		Aggregate b/	
	Demand	Require-	Demand	Require-
	1	ment	3	ment
- - - - Pounds - - - - : - - - - thous. tons - -				
Cane and beet sugar	106.4	84.3	7,400	5,794

a/ On refined basis

b/ On raw basis

Significant quantities of sugar have been lost to the United Nations because supplies are no longer available to us from the Philippines and Java and because our domestic production of beet sugar is below normal. With demand substantially above normal with the need to replenish our depleted stocks and with additional drains on the 1945 supply for relief needs, it will be impossible to meet in full all requirements for sugar. Therefore, the civilian requirement has been placed at close to the 1944 level. The quantity requested is considered necessary (1) to provide for a distribution under rationing that does not result in a large degree of general and individual hardship, and (2) to achieve the objectives of the national food program.

Table 34.--CANE and BEET SUGAR: Civilian Requirements by Quarters, 1945

Item	:	Jan.-	April	July-	Oct.-
	Total	March	June	Sept.	Dec.
	1	2	3	4	5
- - - - Short tons, raw value - - - - -					
Domestic Ration <u>a/</u>	1,639,103	405,847	408,004	411,085	414,167
Home canning	700,000	50,000	300,000	300,000	50,000
Institutional	540,000	135,000	135,000	135,000	135,000
Industrial					
Cereal Products	643,524	147,262	170,785	169,547	155,930
Provisional <u>b/</u>	281,178	45,323	62,264	123,654	49,937
Preserves	169,221	54,336	45,620	34,632	34,633
Pharmacy	31,250	7,812	7,812	7,813	7,813
Other	1,339,362	269,057	337,980	385,969	346,356
Total	2,464,535	523,790	624,461	721,615	594,669
Special Allowances <u>c/</u>	350,000	73,500	91,000	98,000	87,500
Inventory Increase <u>d/</u>	100,000	100,000			
Grand Total	5,793,638	1,288,137	1,558,465	1,665,700	1,281,336

a/ Based on 96 percent redemption and the following estimates of ration books outstanding by quarters: 131,700,000; 132,400,000; 133,400,000; 134,400,000.

b/ Processed fruits and vegetables (except pickled); meat packing; bulk condensed milk; and sugar for bees. Does not include an estimated 100,663 tons to be used in the production of these items for noncivilians, by quarters: January-March, 5,551; April-June, 6,046; July-September, 73,028; October-December, 16,038.

c/ Provision for population shifts, petitions for relief from hardship, unauthorized distribution in all civilian uses and other contingencies under rationing.

d/ Expected increase in the inventories of users and wholesalers and retailers due to the depletion in inventories in latter part of 1944.

Domestic Ration

The requirement for sugar for distribution under the domestic ration totals 1,639,103 tons, raw value. This will provide for the continuance of an annual home ration allowance of 24 pounds per capita and assumes that 96 percent of the stamps outstanding are redeemed. This requirement anticipates the distribution of a larger quantity of sugar than in 1944 because of the increase in the civilian population.

Reports and correspondence indicate that most people find the 24 pound per capita ration substantially restrictive if baking is done in the home. While many consumers in urban areas tend to feel that the ration for direct household use is sufficient, it must be remembered that of all groups they probably rely most on commercial baked goods and eat the greatest number of meals in restaurants. Any reduction in the domestic ration probably would result in a decline in home baking among rural families who do not have access to regular supplies of commercial bakery products. For these reasons, it is our policy to exhaust all other means of reducing distribution of sugar to civilians, when such a reduction is necessary before we recommend that the direct ration be cut.

Home Canning

The civilian requirement for home canning purposes for 1945 totals 700,000 tons, raw value. Distribution of sugar under the home canning program in 1944 was approximately 1 million tons. However, much of this sugar was not used for home canning purposes. In 1943 generous estimates of the quantity of sugar actually used for home canning would not be more than 560,000 tons. In 1944 it appears that a larger percentage of the home canning sugar distributed was actually used for that purpose but the absolute maximum probably would be in the neighborhood of 700,000 tons.

The administration of the home canning program is particularly difficult. It is essential to establish a program that will be rigid enough to prevent wholesale issuance of sugar not intended to be used for canning purposes, while, at the same time, being simple enough so that it will not act as a deterring influence on the efforts to increase the volume of canning done in the home. The 1943 and 1944 canning sugar programs have been partially effective in achieving both of these inconsistent objectives.

The 1945 requirement for canning sugar contemplates some slight reduction in the volume of home canning done in 1945 as compared with 1944 because commercial preserves now are not rationed and because the supply of fruits for home canning use may not be as plentiful as in 1944. If unauthorized distribution can be held to reasonable limits, this quantity should provide adequate supplies of home canning sugar.

Institutions: The requirement for institutions totals 540,000 tons, raw value, approximately equal to estimated distribution under this program in 1944. This quantity is estimated to be sufficient to maintain per-meal allowances in effect in 1944.

Industrial Users: The civilian requirement for industrial users is based upon the desire to (1) maintain maximum production of canned fruits and vegetables, meats, and other items of importance in the diet; (2) insure continued consumption of cereal products which are efficient foods in relative abundance; (3) maintain civilian consumption of preserves at the 1944 level; and (4) provide other users with the maximum amount consistent with these objectives.

Cereal Products: The civilian requirement for sugar for cereal products totals 643,524 tons, raw value. This requirement includes sugar for commercially baked goods and grain mill products such as breakfast foods.

The requirement will provide sufficient supplies of sugar to allow the use of approximately 60 million barrels of flour in the production of commercially baked products for civilians at an average ratio of 10 parts cane and beet sugar to 100 parts flour. The increased use of flour in commercially baked products since 1941 in part has reflected the continued decline in the amount of baking done in the home. It is expected that this trend away from home baking will continue in 1945 and sugar available for use in commercially baked goods must be sufficient to permit the use of increased quantities of flour, if the current overall level of cereal consumption by civilians is to be maintained in 1945.

An average ratio of 10 parts cane and beet sugar to every 100 parts flour is lower than the average sugar-to-flour use by commercial bakers in the 10 years preceding the war. Data from the Census of Manufacturers indicate that the cane and beet sugar use increased from 10.8 percent of the flour used in 1931 to 12.0 percent in 1939. If the trend present in the 1930's continued, it is estimated that in 1941 cane and beet sugar use was at least 12.5 percent of the flour use.

It is believed that sufficient palatability and variety may be achieved in commercial bakery products with an average allowance of 10 parts cane and beet sugar to 100 parts flour because: (1) It is expected that the sugar conservation practices adopted by bakers since the advent of rationing will be continued. These measures have included the elimination of the highest sugar-content items, changes in formula to achieve a greater volume of finished products with the same quantity of sugar, and a reduction in, or elimination of, icings. (2) Larger quantities of corn sugar and sirup have been available for use in commercially baked products since the beginning of cane and beet sugar rationing. Despite

increased use of corn sirup, current estimates indicate that the quantity requested will require approximately a 20 percent reduction in sugar use relative to flour use, as compared with 1941, and necessitates an increase in the proportion of relatively low-sugar-content items.

Provisional Users: The civilian requirement totals 281,178 tons, raw value, and covers sugar requirements for the civilian share of the production of: (1) canned and frozen vegetables and fruits; (2) meats; (3) bulk sweetened condensed milk. In addition, it includes the estimated use of sugar for feeding bees.

The production of these items, because of their importance in the diet or the nature of their production, should not be limited by shortages of sugar. The requirement is based upon the maintenance of provisional allotments which limit the per-unit use of sugar but provide total quantities on the basis of expected production. The estimated amounts needed to meet the requirements of provisional users are based upon official estimates of production in all instances where available; and in other cases the estimated production used has been checked with commodity specialists in various agencies. The net civilian requirements are based upon allocations or upon War Food Orders reserving portions of the production for noncivilian use.

Preserves:

The civilian requirement for sugar for the commercial production of preserves totals 169,221 tons, raw value, sufficient to provide for a production of approximately 530 million pounds of preserves in 1945. Preservers will not receive sugar on a provisional basis but the Office of Price Administration will fix allotments at a level which will result in production of the desired amount.

The production of 530 million pounds of preserves for civilian use will provide approximately the same quantity as was consumed during 1944. However, stocks of preserves in the hands of packers and distributors are at relatively high levels, and these, together with increased home production of preserves in 1944, should mean that commercial production equal to 530 million pounds will adequately supply the civilian market.

Pharmacy Products: The civilian requirement is placed at 31,250 tons, raw value. This will permit the continuance of the current basic allotment of 125 percent of 1941 use.

Other: The civilian requirement for other industrial users and for special allowances and unauthorized distribution under the rationing program totals 1,789,362 tons, raw value.

The requirement for special allowances totals 350,000 tons, raw value. This quantity is needed to cover distribution of sugar under the population shift provision of the rationing regulations, petitions for relief from hardship, unauthorized distribution and known

underestimation of 1941 use, upon which industrial allotments are based. Actual data on 1941 usage are not available but experience has shown that the estimates used result in an underestimation of the quantity actually distributed. With longer experience in rationing, methods of estimating the volume of sugar that will be distributed under any specific ration level have improved. Compilations of actual 1941 use are expected shortly from OPA and, when available, undoubtedly will allow the assignment of part of this special allowance to specific users.

The requirement also provides for a movement of up to 100,000 tons of sugar from primary distributors into the inventories of the distributive trade. Normally, this latter group depletes its inventories in December because of the holiday season. The depletion of inventories was greater than normal in 1944, because of the distribution problems encountered in the latter part of 1944 and inventories must be replenished in early 1945.

The remaining part of this requirement is for industrial uses not provided for specifically in the requirements outlined above. These uses include a variety of products--from salad dressing to sherbets. These items are deemed less essential to the adequacy of the civilian diet than are cereal products, preserves, and those items on a provisional basis. Above a certain minimum level, allotments for these products must depend upon the quantity of sugar available for civilian use after the more essential requirements of the national food program have been met.

Problems of Distribution:

Based upon over two years of experience in distributing short supplies of sugar, the War Food Administration has developed a general policy outlining the relative priorities for various civilian uses of sugar, which are consistent with the objectives of the national food program. To implement the program of the War Food Administration it is necessary to have an annual distribution of at least 5,500,000 tons of sugar. If the supply available for civilian distribution is below this amount, meeting fully the needs of users with the highest priority would leave less essential users with a supply so small that undue hardship would result.

The policy of the War Food Administration is as follows:

1. To maintain the level of the home ration at an annual rate of 24 pounds per person, since this allotment is substantially restrictive for certain classes of families.
2. To provide adequate supplies of sugar for home canning purposes.

3. To prevent shortages of sugar from limiting the production of meats, canned fruit and vegetables, and other commodities of importance in the diet.
4. To prevent shortages of sugar from limiting the consumption of cereal products, which are efficient foods available in relative abundance and are the items most commonly used by all segments of the population.
5. To provide for other users the maximum amount consistent with the objectives as outlined above.

During the first quarter of 1945 the uncertainty as to the supply, the record low level of stocks, and the backlog of ration evidence in the hands of civilian users necessitated a reduction from 1944 levels in ration allotments. For at least one period, the five-pound ration stamp for direct household use, to be validated on February 1, will be good for 3 rather than $2\frac{1}{2}$ months. Allotments for institutions were reduced by at least 10 percent, and the basic allotment for industrial users was reduced from 80 to 70 percent of 1941 use. However, cereal products and pharmacy products remained at their 1944 rate of 80 and 125 percent of 1941, respectively.

Because of the importance of sugar in a wide variety of food products, it is essential that enough flexibility be maintained in the rationing program so that supplies of sugar may be temporarily directed into channels which will help to alleviate emergency situations in other segments of the national food program. The cost of this flexibility in some instances is somewhat less controlled over the actual quantity of sugar flowing out under the rationing program. However, the over-all effect of a rationing program which can implement rather than impede the accomplishment of the national food program far outweighs the cost involved.

Other Sugars and Sirups

Consumption in Recent Years: Annual consumption of sugars and sirups, other than cane and beet sugar, was relatively stable in the pre-war period at approximately 16 pounds per capita, as is shown in table 35. Consumption increased slightly in 1941, and since 1942 it has been considerably above the pre-war average. Most of the increase has been in corn sugar and corn sirup, especially sirup. Since supplies of cane and beet sugar have been below the quantities industrial users could consume, they have used increased quantities of corn sweeteners and could have used larger quantities if they had been available.

Table 35.--SUGARS and SIRUPS: Civilian Per Capita Annual Consumption for Specified Periods.

Item	: Apparent civilian consumption a/					
	: 1932	: 1935-39	: 1941	: 1942	: 1943	: 1944
	: 1	: 2	: 3	: 4	: 5	: 6
	- - - - - Pounds per capita - - - - -					
Corn sugar <u>b/</u>	5.38	3.15	3.77	4.69	4.47	4.25
Corn sirup <u>b/</u>	5.22	6.93	7.84	13.15	11.57	11.21
Honey	1.23	1.36	1.78	1.37	1.62	1.58
Other <u>c/</u>	3.82	5.22	3.59	4.37	5.22	5.47
Total	15.65	16.66	16.98	23.58	22.88	22.51

a/ With the exception of corn sirup, no adjustments made for use of these products by noncivilians. Quantities involved believed to be small.

b/ Estimated food use. Estimates are tentative and subject to revision. Adjustments made for estimated use of sirup in products used by noncivilians.

c/ Includes maple sugar, maple sirup, sugar cane sirup, sorgo sirup, cane refiners sirup, and edible molasses.

Table 36.--SUGARS and SIRUPS: Civilian Aggregate Annual Consumption for Specified Periods.

Item	: Apparent civilian consumption a/					
	: 1932	: 1935-39	: 1941	: 1942	: 1943	: 1944
	: 1	: 2	: 3	: 4	: 5	: 6
	- - - - - Million pounds - - - - -					
Corn sugar <u>b/</u>	675.0	409.0	500.0	620.0	580.0	550.0
Corn sirup <u>b/</u>	655.0	900.0	1,040.0	1,740.0	1,500.0	1,450.0
Honey	154.0	176.0	236.0	181.0	210.0	204.0
Other <u>c/</u>	480.0	677.0	476.0	578.0	676.0	708.0
Total	1,964.0	2,162.0	2,252.0	3,119.0	2,966.0	2,912.0

a/ With the exception of corn sirup no adjustments made for use of these products by noncivilians. Quantities involved are believed to be small.

b/ Estimated food use. Estimates are tentative and subject to revision. Adjustments made for estimated use of sirup in products used by non-civilians.

c/ Includes maple sugar, maple sirup, sugar cane sirup, sorgo sirup, cane refiners sirup, and edible molasses.

Demand for molasses and honey for use in manufactured food products also showed sharp increases after the establishment of rationing controls on cane and beet sugar. To maintain reasonable supplies of these two items for household use, their use in manufactured food products is controlled by War Food Orders.

Demand and Requirement for 1945: It is estimated that the demand for sugar and sirups, other than cane and beet sugar, will be somewhat lower in 1945 than in 1944. Demand, however, will be higher than supplies available in 1943 and 1944 and in the aggregate will be close to the level of consumption in 1942. This will be particularly true of corn sugar and corn sirup. In the summer of both 1943 and 1944 short supplies of corn limited the production of corn sweeteners and, despite every effort on the part of the industry to equitably allocate the available supply, many food manufacturers faced production stoppages because of their inability to purchase corn sugar or sirup.

It is expected that in 1945 the demand for honey will be somewhat below the level of supplies available in 1944. With the increase in supplies of preserves available for civilian distribution there has been some tendency for sales of honey for household use to slow down. Sales of imported honey have been slowed down; this honey has less general acceptance in the domestic market since it is darker in color and sharper in taste than domestic honey.

Table 37.--SUGARS and SIRUPS: Civilian Demand and Requirement, 1945

Item	Per capita		Aggregate	
	Demand	Requirement	Demand	Requirement
	1	2	3	4
	Pounds		Mil. lbs	
Corn sugar	4.8	4.5	620.0	583.0
Corn sirup	13.4	12.3	1,740.0	1,600.0
Honey	1.5	1.5	190.0	190.0
Other a/	5.2	5.2	670.0	670.0
Total b/	24.9	23.5	3,220.0	3,043.0

a/ Includes maple sugar and sirup, sugar cane sirup, sorgo sirup, cane refiners sirup, and edible molasses.

b/ Totals adjusted to addition of individual items

The civilian requirement for sugars and sirups, other than cane and beet sugar, totals 3,043,000 pounds. The distribution of these requirements among individual items or groups of items is shown in table 37. The requirement for corn sweeteners is placed at levels which will provide a slightly larger supply of corn sugar than in 1943 and about 100 million pounds more of sirup. Those quantities should provide for a reasonably equitable distribution of the supply, especially since the level of unrestricted demand in 1945 is expected to be somewhat less than it was in 1944. The requirement for other items is placed at a level slightly under quantities received in 1944. This requirement should provide fully adequate quantities of these items.

Problems of Distribution: Since supplies of cane and beet sugar in 1945 will not be sufficient to meet all demands, especially the demand for use in the manufacture of sugar-containing products, there is little likelihood of any surplus in the supplies of other sugars and sirups, with the possible exception of honey. Even in honey adjustment in the supply probably will be readily made since a reduction in imports probably would occur under such conditions.

The most important problem encountered in attempting to distribute a short supply of these sugars and sirups is to provide a reasonable share of the reduced supply for direct household use. At a time when cane and beet sugar supplies are relatively short and the demand for manufactured sugar-containing products is heavy, food manufacturers could easily absorb a substantial portion of the available supply. Rationing of most of these products, however, would be rather difficult. Many of these items are produced by a large number of small processors. There is extensive home production of sorghum and sirups in the South, and of maple sugar and sirup in the Northeast. However, it is possible under War Food Orders to control the use of these items in manufactured food products to insure a reasonable share of a short supply for household use.

FRUITS

(Prepared by Oscar R. LeBeau and W. R. Whitacre)

Significance to the Food Supply

Fruits contribute variety and palatability to the diet. They are of greatest benefit when consumed fresh, since normally a proportion of the valuable nutrients is lost or destroyed in processing. Fruits contain substantial quantities of vitamins and minerals and since some, such as citrus, make outstanding contributions, they may aid in bringing a diet that is otherwise deficient up to levels that are adequate.

Canned fruits afford an important means of supplementing the scant supply of fresh fruits during off seasons. They are also an important source of fruit for such institutional users as bakeries, hotels, and restaurants where their use saves labor and contributes to more economical utilization of the fruit supply.

Frozen fruits are an important source of ingredients for such industrial users as preservers, pie bakers, and ice cream manufacturers. Direct home use of frozen fruits accounts for a relatively small portion of the total consumption.

Dried fruits provide a generally economical source of fruit for bakeries and table use. Dried prunes, raisins, figs, and dates are regarded as good sources of iron. Dried apricots are an excellent source of vitamin A.

Citrus fruits: Fresh citrus fruit is available to some extent the year round. More than three-fourths of the crop is normally consumed in fresh form. The bulk of that which is processed is consumed as canned juice. Smaller quantities are utilized for concentrate, canned segments, marmalade, and citric acid.

Nutritionally, citrus fruits are important principally as a source of ascorbic acid. This contribution is of outstanding importance because the ascorbic acid in citrus fruits is less susceptible to destruction in processing than is the case with the other major sources of this vitamin. About one-fourth of the ascorbic acid in the 1944 food supply came from citrus sources. Except in areas of production, consumption of fresh citrus fruits is largest among urban people and among the higher income classes.

Apples: Apples comprise about one-fourth of the total fresh fruit supply in normal years. They have long been a staple item in the American diet. Fresh apples are particularly popular as a year-round fruit because of their flavor and the wide variety of ways in which they may be utilized. Before the war, more than four-fifths of the nation's apple crop was regularly distributed to consumers in fresh form, and the remainder processed. The most important of these processed products, in terms of volume, have been apple vinegar, apple butter, apple cider, canned apples, and canned applesauce.

Other fruits: In addition to citrus fruit and apples, Americans have come to rely on a large number of other fruits for variety and succulence in their daily diet. Most important of these, from the standpoint of volume, are peaches, bananas, grapes, pears, cherries, plums, prunes, pineapples, and strawberries. When considered as a group, the noncitrus fruits contain only fair amounts of vitamins and minerals. However, certain members are particularly valuable. For example, fresh peaches and apricots are fairly good sources of vitamin A; and fresh pineapples and strawberries are rich sources of ascorbic acid. All supply variety and palatability to the diet.

Melons: Cantaloups and watermelons are a favorite food for many. Cantaloups are a reasonable good source of ascorbic acid and yellow flesh varieties are fairly good sources of vitamin A.

FRESH FRUITS AND MELONS

Consumption in Recent Years

While the production of fruit has increased substantially in the past decade, the per capita annual consumption of fresh fruit has remained at a fairly uniform level. This is chiefly because larger quantities of fruit have been utilized for processing.

Rapid expansion of the fresh fruit supply has not been feasible because of the time required for orchards to reach bearing age. Thus, the impact of heavy military and export requirements on the civilian supplies has been felt more keenly in the case of fruits than vegetables.

Maintenance of the over-all consumption of fresh fruits by civilians has been possible chiefly because of the increased number of citrus fruit trees that have come into bearing in recent years. In the case of apples, bananas, and strawberries, the supply for civilian consumption has decreased substantially (tables 38 and 39).

Total per capita consumption of fresh grapefruit, oranges, and lemons has nearly doubled since 1932, reaching a record level of about 68 pounds per capita from the 1943-44 crop. Civilian supplies of fresh citrus for 1944-45 are currently estimated at 62 pounds per capita, consisting of about 11 pounds of fresh grapefruit, 46 of oranges, and about 5 pounds of lemons and limes.

Per capita annual consumption of fresh apples has reflected a downward trend for the past decade or more. Consumption of commercially produced fresh apples averaged about 30 pounds per capita during the pre-war period 1935-39. Except for 1941, when consumption totaled 31 pounds, civilian disappearance in recent years ranged between 25 and 27 pounds, due principally to high noncivilian requirements and the increased demand for processed apple products.

The apparent per capita annual consumption of fresh fruits other than citrus and apples averaged about 57 pounds during the period 1935-39 and increased slightly in 1941. Since then the increased food requirements for military and export purposes have decreased the supplies available to civilians. Per capita consumption in 1943 amounted to only about 35 pounds, while better growing conditions in 1944 resulted in a civilian supply of about 53 pounds per capita.

Table 38--FRESH FRUITS AND MELONS: Civilian Per Capita Annual Consumption for Specified Periods a/

	Apparent civilian consumption					
Item	1932	1935-39	1941	1942	1943	1944 b/
	1	2	3	4	5	6
	----- Pounds per capita c/ -----					
<u>Citrus</u>						
Oranges and tangerines	25.9	34.0	41.0	42.2	49.6	46.4
Grapefruit.	7.4	10.8	11.8	12.3	12.9	10.8
Lemons	3.2	4.0	4.1	5.1	5.1	5.1
Limes	d/	d/	.1	.2	.1	.1
Total	36.5	48.8	57.0	59.8	67.7	62.4
Apples (commercial)	d/	30.2	30.9	26.7	25.2	25.9
<u>Other fruit</u>						
Apricots	.4	.5	.4	.5	.5	.8
Avocados	.1	.2	.4	.3	.4	.2
Bananas	19.7	22.8	19.2	9.9	9.5	11.6
Cherries	1.3	.8	.9	.9	.8	1.3
Cranberries	.4	.3	.4	.3	.3	.1
Figs	.1	.1	.1	.1	.1	.1
Grapes	7.8	6.3	6.2	6.2	5.6	8.1
Peaches	9.3	13.6	18.2	14.3	8.0	18.3
Pears	5.3	6.5	6.5	6.7	5.5	7.9
Pineapples	.8	.8	.8	.4	.5	.6
Plums & prunes	1.8	1.6	1.7	1.8	1.6	2.3
Strawberries	3.4	2.6	2.7	2.7	1.5	.9
Other berries	.9	.8	.7	.7	.6	1.0
Total	51.3	56.9	58.2	44.8	34.9	53.2
Grand Total e/	87.8	135.9	146.1	131.3	127.8	141.5
<u>Melons</u>						
Cantaloups, etc.	6.9	6.2	5.8	4.5	4.2	5.6
Watermelons	11.5	12.4	11.9	10.1	8.8	11.9
Total	18.4	18.6	17.7	14.6	13.0	17.5

a/ Data for apples, pears, bananas, and pineapples are on a calendar year basis, those for other fruits are for the crop year beginning in the year shown.

b/ Preliminary.

c/ Farm weight basis.

d/ Not available.

e/ Excludes some minor fruits not enumerated above.

f/ Does not include apples.

Table 39--FRESH FRUITS AND MELONS: Civilian Aggregate Annual Consumption for Specified Periods a/

Item	Apparent civilian consumption					
	1932	1935-39	1941	1942	1943	1944 b/
	1	2	3	4	5	6
----- Million pounds c/ -----						
<u>Citrus</u>						
Oranges and tangerines	3,254	4,413	5,430	5,471	6,408	5,997
Grapefruit	927	1,396	1,552	1,595	1,664	1,404
Lemons	397	524	544	658	664	649
Limes	d/	d/	15	19	14	20
Total	4,578	6,333	7,541	7,743	8,750	8,070
Apples (commercial)	d/	3,915	4,100	3,528	3,261	3,351
<u>Other fruits</u>						
Apricots	56	64	56	68	67	106
Avocados	17	26	51	37	49	31
Bananas	2,478	2,966	2,553	1,315	1,227	1,503
Cherries	161	105	122	126	107	164
Cranberries	55	39	46	39	33	10
Figs	8	13	14	12	10	16
Grapes	975	812	823	815	727	1,046
Peaches	1,166	1,767	2,413	1,888	1,032	2,370
Pears	660	838	862	886	714	1,026
Pineapples	108	103	104	50	65	80
Plums & prunes	221	209	225	235	205	291
Strawberries	421	332	357	358	192	110
Other berries	120	110	98	92	80	132
Total	6,446	7,384	7,724	5,921	4,508	6,885
Grand Total e/	11,024	f/17,632	19,365	17,192	16,519	18,306
<u>Melons</u>						
Cantaloups, etc.	864	804	769	596	543	719
Watermelons	1,442	1,604	1,578	1,338	1,141	1,538
Total	2,306	2,408	2,347	1,934	1,684	2,257

a/ Data for apples, pears, bananas, and pineapples are on a calendar year basis, those for other fruits are for the crop year beginning in the year shown.

b/ Preliminary.

c/ Farm weight basis.

d/ Not available.

e/ Excludes some minor fruits not enumerated above.

f/ Does not include apples.

The apparent average per capita consumption of cantaloups and watermelons from commercial production during the period 1935-39 was about 6 and 12 pounds, respectively. Consumption has continued at approximately this level except during 1942 and 1943 when civilian supplies decreased because production was not encouraged by the War Food Administration.

Demand and Requirement for 1945

It is expected that the demand for fresh fruit will continue to be good throughout 1945 but there may be bottlenecks in distribution due to inadequacy of containers, refrigeration, transportation, and other marketing facilities.

The demand for fresh fruits is particularly sensitive to changes in the national income level. Assuming that employment and wages in 1945 will be somewhat smaller than the record level of 1944, it is expected that the per capita annual demand for fresh fruit will total about 161 pounds per capita as compared to an estimated civilian supply of about 141 pounds in 1944. The demand for fresh citrus fruit, apples, and other fruit is estimated at about 63, 33, and 65 pounds, respectively.

The over-all civilian requirement for fresh fruit from the 1945 crop has been placed at about 140 pounds per capita or a trifle less than the estimated civilian supply of 1944. This amounts to an aggregate civilian requirement of 18,159 million pounds of all fresh fruits (table 40).

The requirement for fresh fruit is approximately 13 percent less than the estimated civilian demand, since it is obviously not feasible to expand total production sufficiently to meet the full demands of all claimants. The civilian requirement has been placed at a conservative level to permit a ready market for any additional supplies that might become available to civilians should the need for fresh fruits for domestic military camps be substantially reduced.

Fresh citrus fruit: Because of their vitamin content and general popularity, oranges and grapefruit are among the most important fruit items in the American diet. The civilian requirement for all fresh citrus fruits for the marketing year beginning October 1, 1945, is given at 59 pounds per capita, or an aggregate of 8,202 million pounds, distributed as indicated in table 40. This compares with an estimated civilian supply of 8,750 million and 8,070 million pounds during 1943-44 and 1944-45, respectively. It represents a conservative estimate of the quantity that can be marketed readily under prevailing income conditions.

Table 40 --FRESH FRUITS AND MELONS: Civilian Demand and Requirement for 1945

Item	Per Capita		Aggregate	
	Estimated	Annual	Estimated	Annual
	civilian	requirement	civilian	requirement
	demand		demand	
	1	2	3	4
	Pounds a/		Million pounds a/	
Citrus				
Oranges & Tangerines	45.0	43.0	5,849.5	5,589.5
Grapefruit	13.0	11.4	1,689.8	1,481.9
Lemons	5.0	4.4	649.9	571.9
Limes	.1	.1	13.0	13.0
Total	63.1	58.9	8,202.2	7,656.3
Apples (Commercial)	33.0	30.5	4,289.6	3,964.6
Other Fruit				
Apricots	.7	b/	91.0	b/
Avocados	.5	b/	65.0	b/
Bananas	23.0	b/	2,989.7	b/
Cherries	1.5	b/	195.0	b/
Cranberries	.5	b/	65.0	b/
Figs	.1	b/	13.0	b/
Grapes	7.0	b/	909.9	b/
Peaches	18.0	b/	2,339.8	b/
Pears	7.0	b/	909.9	b/
Pineapples	.8	b/	104.0	b/
Plums, prunes	1.8	b/	234.0	b/
Strawberries	3.0	b/	390.0	b/
Other berries	1.0	b/	130.0	b/
Total	64.9	50.3	8,436.3	6,538.4
Grand Total	161.0	139.7	20,928.1	18,159.3
Melons				
Cantaloups, etc.	7.0	c/	909.9	c/
Watermelons	13.0	c/	1,689.8	c/
Total	20.0	c/	2,599.7	c/

a/ Farm weight basis.

b/ Will accept residual supply provided requirement for group is satisfied.

c/ Will accept residual supply.

Fresh apples: In view of the importance of fresh apples in the dietary pattern of civilians, the civilian requirement for the marketing year beginning July 1, 1945, is placed at about 30 pounds per capita as compared with an estimated demand of 33 pounds for the calendar year 1945, and an estimated civilian consumption of about 26 pounds during the calendar year 1944 and an estimated civilian supply of about 27 pounds per capita during the marketing year 1944-45. This amounts to an aggregate 1945-46 requirement of about 3,965 million pounds, or about 83 million bushels, (table 40).

Other fresh fruit: The 1945 per capita annual requirement for fresh fruits other than citrus and apples is indicated at about 50 pounds, or about three-fourths of the estimated free-market demand of 65 pounds. This amounts to an aggregate requirement for the 1945 crop year of about 6,538 million pounds for this group which is slightly lower than the 6,885 million pounds estimated consumed by civilians from the 1944 crop. No specific requirements are submitted for the individual commodities in this group. However, it is expected that the total minimum requirements for this group will be supplied from the respective commodities in approximately the same proportion as that indicated by the estimates of demand.

Melons: The 1945 civilian demand for cantaloups and watermelons--always popular items--is estimated at 7 and 13 pounds, respectively. However, considering the high cost to the consumer and the relatively low importance from the nutritional standpoint, no specific civilian requirements for cantaloups and watermelons are being submitted.

Problems of Distribution

Abundant supplies afford the best assurance that fresh fruit can be made available in all areas at reasonable prices. However, most fruits are highly perishable, and surplus supplies can quickly lead to unwarranted waste and to unfavorable returns for producers and distributors. Moreover, to avoid heavy losses, ample marketing facilities such as containers, refrigeration, and transportation must be available to handle all production promptly.

On the other hand, if supplies are too far short of demand, prices to consumers become excessive, and low income families cannot afford the fresh fruits they should have. Moreover, inadequate supplies are likely to result in grading standards being lowered or ignored and in price ceilings being violated.

Citrus fruits: Moderate difficulty may be encountered in marketing the 1944-45 crop of oranges, but it is anticipated that a record volume of citrus fruit will be utilized in the

production of canned juices which have been enjoying a greatly expanded market. While it is too early to know what the 1945-46 production of citrus fruits will be, it is reasonable to assume that with normal weather conditions and with many young groves reaching bearing age, a production equalling the record and near-record level of the past 2 years can be expected. Any substantial increase over this amount might result in surpluses unless demand also increases. With more citrus fruit trees coming into bearing annually, the citrus fruit industry is likely to encounter increasing distribution problems when the current heavy demand for military and export purposes is reduced. It is important to recognize this potential problem and to plan ways and means of coping with surpluses in the event that they occur.

Fresh apples: Several new developments have affected the general marketing outlook for apples during recent years: the increased competition from fresh citrus fruit, the larger proportion of the apple crop that is used for processing, and the near disappearance of the export market. These factors are expected to continue to influence the market outlook for 1945-46. However, no serious surplus of fresh apples is anticipated as long as noncivilian requirements for fresh apples and processed apple products continue at the current high level. Should the production in the East and West differ greatly from normal, Federal assistance in the form of subsidy payments may be desirable in some instances to obtain satisfactory regional distribution of a short supply.

Other fresh fruits: As long as demand remains at the present high level, it is probable that the domestic market will absorb at favorable prices almost any volume that can be produced from the present orchards. This does not preclude troublesome temporary local distribution problems, due to labor shortage, transportation difficulties, and other causes. The generally satisfactory disposition that was made of the record peach and cherry crops in 1944 is evidence that the over-all demand for fruit is exceptionally good. Moreover, there is a considerable degree of substitution among different fruits so that a short supply of one item may result in a higher demand for other items. In the case of bananas and pineapples, the supply is highly dependent on the ocean shipping situation.

Melons: Cantaloups and watermelons have been enjoying an unusually favorable market during the past three seasons. While these items are not regarded as relatively efficient foods in terms of the land, labor and transportation required to furnish a given quantity of nutrients, growers can be expected to continue to produce substantial quantities as long as returns continue favorable. Labor and transportation are among the principal distribution problems confronting melon producers and distributors.

CANNED FRUITS AND FRUIT JUICES

Consumption in Recent Years

The annual consumption of canned fruits and fruit juices increased from an average of about 21 pounds per capita during 1935-39 to a peak of about 26 pounds per capita in 1941-42. Since then, the heavy requirements for military and export purposes and the need for restricting the use of tin have diminished the quantities available to civilians to a point where in 1944-45 only about 15 pounds of canned fruit and fruit juices have been allocated per capita (table 41). In terms of aggregates, civilians consumed a total of about 79 million cases (basis $2\frac{1}{2}$'s) of canned fruit in the peak year 1941-42, compared with an allocation of about 46 million cases in 1944-45 and an average annual consumption of about 63 million cases during 1935-39 (table 42).

Substantial gains have been made in the per capita consumption of canned citrus juice in recent years, the consumption in 1943-44 being almost double the annual average for the years 1935-39. Only negligible quantities of citrus segments have been available for civilians since 1941-42 as practically the entire production has been required to fulfill Government requirements.

Civilian consumption of the canned fruits other than citrus also has been lowered markedly by the heavy requirements for military and export purposes. Thus, while the per capita consumption for this group of items rose from an average of about 14 pounds per capita for 1935-39 to nearly 18 pounds in 1941-42, the civilian supply has fallen to less than 10 pounds annually for the past 2 years. These decreases have been particularly significant in the case of such major fruits as canned peaches, pears, pineapple, and fruit cocktail.

Consumption of the canned juices other than citrus has followed much the same pattern as have canned deciduous fruits. Civilian disappearance accounted for an average of about 4 pounds per capita during 1935-39 as compared to an estimated civilian supply of about 2 pounds during 1944-45. The shortage of pineapple juice accounted for most of the decrease in recent years.

Citrus concentrates: The use of citrus concentrates as a base for various beverages has increased substantially during recent years. These concentrated juices are in demand principally by beverage manufacturers and other industrial users. Few data are available regarding the quantities consumed prior to the fiscal year 1943-44. Civilians are esti-

Table 41 --CANNED FRUITS: Civilian Per Capita Annual Consumption for Specified Periods, and Estimated Demand for 1945 a/

Item	Apparent Civilian Consumption					
	1932	1935-39	1941	1942	1943	1944 b/
	1	2	3	4	5	6
-Pounds per capita (processed)-						
<u>Citrus Fruits & Juices</u>						
Grapefruit segments	.3	.6	1.0	.2	c/	c/
Citrus salad	d/	c/	c/	c/	c/	c/
Grapefruit juice	.1 e/	1.9 e/	1.8	2.8	3.6	2.5
Orange juice	.5 e/	.4 e/	1.0	.2	1.1	1.2
Lemon juice	.4 e/	.1 e/	.1	c/	c/	c/
Mixed citrus juice	d/ e/	c/ e/	.5	.3	1.0	.9
Total	1.3	3.0	4.4	3.5	5.7	4.6
<u>Other Fruit</u>						
Apples	.8	.6	1.0	.6	.3	.5
Applesauce	d/	.6	.9	.9	.5	1.1
Apricots	.6	.9	1.3	1.1	.2	1.5
Berries (all)	.3	.4	.5	.3	.3	c/
Cranberries	.1	.4	.9	.9	.5	.2
Cherries, RSP	.5	.6	.5	.6	.1	.2
Cherries, sweet	.2	.2	.3	.2	.3	.3
Figs	.1	.1	.2	.2	.1	.2
Fruit salad & cocktail	.2	1.0	1.9	1.9	1.3	.7
Olives	.4	.4	.2	.1	.1	.1
Peaches	2.8	3.2	3.9	4.1	2.6	1.5
Pears	.8	1.2	2.0	1.2	1.0	.3
Pineapple	3.0	4.1	3.7	1.6	1.1	1.6
Plums & Prunes	.2	.6	.4	.3	.7	.5
Total	10.0	14.3	17.7	14.0	9.1	8.7
<u>Other Juices</u>						
Apple	d/	.1	.3	.3	.2	.4
Grape	.3	.6	.5	.6	.3	.3
Pineapple	d/	2.6	2.1	1.1	1.2	.6
Prune, Nect. etc.	d/	.3	.5	.5	.5	.6
Total	d/	3.6	3.4	2.5	2.2	1.9
Grand Total	d/	20.9	25.5	20.0	17.0	15.2

a/ Based on crop year beginning in year shown.

b/ Preliminary estimate.

c/ Less than 0.05 pound.

d/ No data available.

e/ Includes pulp and concentrates reduced to single strength juice equivalent.

Table 42 --CANNED FRUITS: Civilian Aggregate Annual Consumption
for Specified Periods a/

Item	Apparent civilian consumption					
	1932	1935-39	1941	1942	1943	1944 b/
	1	2	3	4	5	6
----- Million cases 24/2's -----						
<u>Citrus fruit & juices</u>						
Grapefruit segments	1.3	2.8	4.2	.6	c/	c/
Citrus salad	d/	.1	c/	c/	c/	c/
Grapefruit juice	.4 e/	8.4 e/	8.6	12.8	16.1	10.9
Orange juice	2.2 e/	1.9 e/	4.6	1.1	4.6	5.4
Lemon juice	1.7 e/	.4 e/	.4	.3	.2	.2
Mixed citrus juice	d/ e/	c/ e/	2.2	1.1	4.3	3.9
Total	5.6	13.6	20.0	15.9	25.2	20.4
----- Million cases 24/2½'s -----						
<u>Other fruits</u>						
Apples	2.6	1.9	3.4	2.2	1.1	1.7
Applesauce	d/	1.7	2.8	2.8	1.6	3.1
Apricots	1.6	2.6	3.8	3.1	.5	4.3
Berries (all)	.9	1.2	1.6	.9	.9	.1
Cranberries	.3	1.0	2.6	2.5	1.3	.5
Cherries, RSP	1.6	1.8	1.6	1.7	.2	.7
Cherries, sweet	.5	.6	.8	.7	.8	.8
Figs	.2	.4	.6	.4	.4	.5
Fruit salad and cocktail	.7	2.9	5.6	5.4	3.7	2.0
Olives	1.7	2.1	1.1	.7	.6	.4
Peaches	8.0	9.6	11.9	12.3	7.9	4.5
Pears	2.4	3.5	6.0	3.7	2.9	1.0
Pineapple	8.4	11.8	10.9	4.6	3.2	4.5
Plums & prunes	.6	1.7	1.3	.7	2.0	1.5
Total	29.5	42.8	54.0	41.7	27.1	25.6
----- Million cases 24/2's -----						
<u>Other juices</u>						
Apple	d/	.4	1.3	1.4	.8	1.6
Grape	1.2	2.8	2.6	2.8	1.6	1.4
Pineapple	c/	11.2	10.0	5.3	5.5	2.8
Prune, nect., etc.	d/	1.4	2.6	2.3	2.3	3.0
Total	d/	15.8	16.5	11.8	10.2	8.8
----- Million cases 24/2½'s -----						
Grand Total	d/	63.1	79.2	60.8	51.5	45.7

a/ Based on crop year beginning in year shown. b/ Preliminary estimate. c/ Less than 0.05 million cases. d/ No data available. e/ Includes pulp and concentrates reduced to single strength juice equivalent.

mated to have received in 1943-44 about 885,600 gallons of citrus concentrates, consisting principally of orange concentrate. Preliminary estimates indicate civilians may receive in 1944-45 as much as 1,495,000 gallons of concentrates, consisting of 76,000 gallons of grapefruit, 1,232,000 of orange, and 187,000 of lemon and lime. These are the largest supplies ever available.

Demand and Requirement for 1945

The demand for canned fruits is largely influenced by the level of consumer income. With the expectation of a relatively high level of national income in 1945 and in view of the severe shortage of canned fruits for the past few years, it is estimated that in the absence of rationing civilian demand for canned fruits and fruit juices during 1945 would aggregate about 76 million cases (basis $24/2\frac{1}{2}$'s) or about 25 pounds per capita. This estimate includes 25.8 million cases (basis $24/2$'s) of citrus segments and juices, 47.9 million cases (basis $24/2\frac{1}{2}$'s) of canned fruits other than citrus, and 15.5 million cases (basis $24/2$'s) of fruit juices other than citrus. While these estimates are conservative, they represent considerably larger quantities than will be available to civilians during the first half of 1945 under the 1944-45 allocation. Requirements for the second half of the calendar year 1945 must be supplied from the 1945 pack (table 43).

In determining the civilian requirements for canned fruits and fruit juices from the 1945 pack, consideration was given to the probable size of the total pack, to the prospective large set-asides for the military, to the civilian demand under prevailing income conditions, to the dietary significance of the respective items, and to the quantities required to achieve reasonably good distribution. Accordingly, the aggregate civilian requirement for 1945-46 has been set at about 55 million cases (basis $24/2\frac{1}{2}$'s). This compares with an estimated civilian supply of about 46 million cases during 1944-45, an estimated civilian demand of about 76 million cases for the calendar year 1945, and a peak consumption of about 79 million cases in 1941-42.

The 1945-46 requirement exceeds the 1944-45 civilian allocation rate, because the current civilian supply is extremely short and commercial carry-over stocks at the beginning of the 1945 pack year are expected to reach a record low for most items. On the other hand, the 1945-46 requirement is much lower than the 1945 civilian demand, since it is assumed that total supplies will be inadequate to provide a larger quantity and that rationing of these items is likely to be necessary for at least a considerable part of the year.

Table 43 --CANNED FRUITS: Civilian Demand and Requirement for 1945

Item	Per Capita			Aggregate		
	Estimated: Annual allocation			Estimated: Annual allocation		
	civilian or requirement rate:			civilian or requirement rate:		
	demand	: Jan.-	: July-	demand	: Jan.-	: July-
	: 1945	: June a/	: Dec. b/	: 1945	: June a/	: Dec. b/
	: 1	: 2	: 3	: 4	: 5	: 6
	Pounds <u>c/</u>			- Million cases 24/2's - -		
Citrus Fruits & Juices						
Grapefruit segments	0.7	d/	e/	3.0	f/	e/
Citrus salad	.1	d/	e/	.5	f/	e/
Grapefruit juice	3.4	2.5	3.4	15.5	10.9	15.5
Orange juice	.7	1.2	e/	3.0	5.4	e/
Lemon juice	.1	d/	e/	.3	.2	e/
Mixed citrus juice	.8	.9	e/	3.5	3.9	e/
Total	5.8	4.6	4.9	25.8	20.4	22.0
- - Million cases 24/2½'s-						
Other Fruit						
Apples	.8	.5	e/	2.6	1.7	e/
Applesauce	.8	1.1	e/	2.4	3.1	e/
Apricots	1.1	1.5	1.0	3.2	4.3	3.0
Berries (all)	.4	d/	e/	1.3	.1	e/
Cranberries	.9	.2	e/	2.5	.5	e/
Cherries, RSP	.5	.2	e/	1.5	.7	e/
Cherries, sweet	.3	.3	e/	.8	.8	e/
Figs	.2	.2	e/	.5	.5	e/
Fruit salad & cocktail	1.7	.7	1.5	5.0	2.0	4.5
Olives	.2	.1	e/	1.0	.4	e/
Peaches	3.6	1.5	2.3	11.0	4.5	7.0
Pears	1.4	.3	.7	4.1	1.0	2.0
Pineapple	3.6	1.6	2.4	10.5	4.5	7.0
Plums & prunes	.5	.5	e/	1.5	1.5	e/
Total	16.0	8.7	10.1	47.9	25.6	30.5
- - Million cases 24/2's- -						
Other Juices						
Apple	.3	.4	e/	1.3	1.6	e/
Grape	.4	.3	e/	2.0	1.4	e/
Pineapple	2.2	.6	1.9	10.5	2.8	8.7
Prune, nectars, etc.	.4	.6	e/	1.7	3.0	e/
Total	3.3	1.9	2.8	15.5	8.8	13.1
- - Million cases 24/2½'s- -						
Grand Total	25.1	15.2	17.8	76.4	45.7	54.7

a/ Based on 1944-45 allocation from 1944-45 supplies.

b/ Requested 1945-46 allocation from 1945-46 supplies.

c/ Processed weight.

d/ Less than 0.05 pound.

e/ Will accept residual supply, provided total requirement for group is satisfied.

f/ Less than 0.05 million cases.

The 1945-46 civilian requirement includes 22.0 million cases (basis 24/2's) of canned citrus, as compared to an estimated 1944-45 civilian supply of about 20 million and an estimated demand for about 26 million cases. The only specific canned citrus fruit requirement is that of 15.5 million cases of grapefruit juice. This juice is selected rather than orange juice, blended juice, or segments, because it is less expensive than the other products and because it has received a much wider distribution as indicated by the relative volume consumed. The remaining 6.5 million cases of the civilian canned citrus fruit requirement may be supplied from any quantities of segments or other juices that the supply permits. Among the nutritive elements in which the average civilian diet is weakest is ascorbic acid, of which citrus fruit and tomatoes are the principal sources. Distribution of fresh citrus fruit, especially grapefruit, is not uniform throughout the country. Canning a reasonable proportion of the civilian share of the citrus fruit supply permits better distribution regionally and throughout the year. It also facilitates more orderly marketing of heavy supplies of citrus fruits.

The 1945-46 civilian requirement for canned fruits includes 30.5 million cases (basis 24/2's) of fruits other than citrus which represents the consumption rate requested for the second half of 1945. Specific requirements amounting to 23.5 million cases are listed for the 5 major items: peaches, pears, pineapples, fruit mix, and apricots. These are the items most widely distributed and for which the use of tin is most justified. The remaining 7.0 million cases required from this group of canned fruits can be supplied in any combination of apples, applesauce, berries, cranberries, cherries, figs, olives, plums, and prunes, so long as the total requirement for the group is satisfied and due consideration is given to the relative demand for the prospective items.

Also included in the 1945-46 civilian requirement for canned fruits is the request for 13.1 million cases (basis 24/2's) of fruit juices other than citrus. Pineapple juice is the only item for which a specific requirement is submitted (8.7 million cases). It is by far the most important noncitrus fruit juice. The remaining 4.4 million cases included in the juice requirement may be supplied from grape juice, apple juice, prune juice, fruit nectars, and other juices in any combination that is most in line with the supply and the requirements of other claimants.

Altogether, the civilian requirement for canned fruits and fruit juices from the 1945 pack has been indicated at about 72 percent of the estimated demand. This provides a substantial margin for absorbing any possible releases from Government stocks resulting from downward adjustments of non-civilian requirements. Under wartime conditions, it is

obviously unrealistic to request a civilian allocation of commercially canned fruits sufficient to fulfill all demands. However, if for the purpose of this discussion we assume that the noncivilian requirements for canned citrus will be roughly the same from the 1945 pack as in 1944 and that the commercial packs for the 2 years will approximately be the same, it would mean that to satisfy in full the 1945-46 civilian demand for canned citrus, the noncivilian requirements for 1945-46 would have to be reduced about 20 percent. Moreover, on the basis of the currently recommended 1945-46 allocation of all other canned fruits and juices, the noncivilian procurement would have to be from 50 to 60 percent less than the overall non-civilian allocation before the civilian demand could be satisfied in full. Since reductions of this magnitude in noncivilian requirements for canned fruits appear unlikely, the civilian requirements have been submitted at approximately 72 percent of the estimated demand level.

Citrus fruit concentrates: Expansion in production facilities makes probable a larger volume of citrus fruit concentrates for civilian use during 1945 than ever before. Accordingly, the requirement for 1945 has been placed at the demand level of 1,300,000 gallons consisting of 100,000 gallons of grapefruit concentrate, 1,000,000 orange, and 200,000 lemon and lime. It is probable that the civilian supply of orange concentrate may be somewhat in excess of the requirement. However, it is not certain that there will be a ready market for more than 1,000,000 gallons of this product.

Problems of Distribution

Since the supply of canned fruits that can be made available for civilians for the duration of the war will be considerably less than the demand, rationing of these commodities may be essential to insure equitable distribution.

In general, point rationing has proved an effective means of controlling the distribution of a short supply of canned fruits. Successful rationing must be predicated on the availability of a sufficient supply of all important items to make Nation-wide distribution feasible, so that consumers in all communities can have a reasonable opportunity of obtaining any one of the more important canned fruits if they are willing to spend their ration stamps for it. This may mean, however, that there is a point at which it may no longer be feasible to ration a given canned fruit. When the supply becomes so small that Nation-wide distribution to the greater proportion of the retail outlets is no longer possible, it is questionable whether the advantages to be gained from rationing outweigh the administrative costs and the burden of inconvenience to distributors and consumers.

In view of the prospect for continuing heavy military requirements for canned fruits, it is unlikely that surpluses of these items will arise in the civilian market during 1945.

FROZEN FRUITS

Consumption in Recent Years

Improvements in freezing and packaging techniques, together with the generally high demand for processed fruits for industrial, institutional, and household use, have given great impetus to the frozen food industry. Civilian consumption of frozen fruits increased rapidly from an average of about 127 million pounds for the period 1937-39 to about 235 million pounds in 1942-43. Military requirements and a generally lower supply of fresh fruit resulted in a civilian supply of about 223 million pounds for 1943-44. Civilian supplies for 1944-45 are preliminarily estimated at about 244 million pounds, or about 2 pounds per capita (table 44).

Normally, berries account for more than half of the total quantity of frozen fruit packed. Strawberries are the most important single frozen fruit, while cherries, an important factor in the pie industry, rank a close second. Large quantities of grape pulp and juice are also frozen for use chiefly by the preserve and grape juice industries. Other fruits frozen in significant quantities are raspberries, blackberries, peaches, apples, and apricots.

Demand and Requirement for 1945

In view of the prospective short supplies of canned fruits and of most dried cut fruits, the civilian demand for frozen fruits in 1945 is expected to continue to be strong. Preservers, bakers, confectioners, ice cream makers, and other industrial users would readily utilize larger quantities than are available at present. Institutional users find frozen fruits a great labor-saving factor and a convenient means of supplementing the short supply of canned fruits. Demand for household use is also expected to continue good under prevailing income conditions.

Altogether, the civilian demand for frozen fruits in 1945 is estimated at 300 million pounds, or about 23 percent more than the estimated civilian supply during 1944-45 (table 45).

Frozen fruit requirements are submitted on a pack year basis. Supplies for consumption during the first part of 1945 are dependent on the 1944 pack while those for the latter part of 1945 must be supplied from the 1945 pack.

In computing the 1945-46 civilian requirement for frozen fruits, special consideration was given to the fact that War Food Order 111 limits the quantities of frozen fruits and vegetables which may be held in freezer storage to the

Table 44 -- FROZEN FRUITS: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	Apparent Civilian Consumption					
	1932	1935-39 a/	1941	1942	1943	1944 b/
	1	2	3	4	5	6
----- Pounds per capita c/ -----						
Strawberries	d/	0.39	0.54	0.60	0.32	0.21
Raspberries	d/	.08	.15	.15	.16	.15
Blackberries	d/	.05	.07	.06	.06	.06
Other Berries	d/	.04	.13	.08	.07	.13
Total	d/	.56	.89	.89	.61	.55
Cherries	d/	.26	.26	.35	.27	.35
Apples	d/	.01	.08	.12	.17	.27
Apricots	d/	e/	.01	.04	.10	.17
Grape pulp & juice	d/	.05	.12	.17	.28	.15
Peaches	d/	.03	.05	.11	.11	.19
Other	d/	.06	.11	.12	.18	.20
Total	d/	.41	.63	.91	1.11	1.33
Grand Total	.6	.97	1.52	1.80	1.72	1.88
----- Million pounds c/ -----						
Strawberries	d/	50.0	71.2	77.8	41.3	27.5
Raspberries	d/	10.8	19.6	19.4	20.4	19.1
Blackberries	d/	6.1	9.9	8.2	8.0	7.9
Other Berries	d/	5.4	17.6	9.8	9.6	17.1
Total	d/	72.3	118.3	115.2	79.3	71.6
Cherries	d/	34.0	34.5	45.9	34.8	45.4
Apples	d/	1.8	10.0	15.1	22.4	34.6
Apricots	d/	0.2	0.7	5.3	13.2	21.9
Grape pulp & juice	d/	6.5	16.8	22.6	36.0	19.2
Peaches	d/	4.1	6.6	14.3	14.4	25.3
Other	d/	8.1	14.9	16.1	22.7	26.0
Total	d/	54.7	83.5	119.3	143.5	172.4
Grand Total	77.9	127.0	201.8	234.5	222.8	244.0

a/ 1937-39 average; based on data from Western Canner & Packer, 1942 Yearbook, earlier data not available.

b/ Preliminary estimate.

c/ Processed weight.

d/ Data not available.

e/ Less than 0.005 pound.

Table 45 --FROZEN FRUITS: 1945 Civilian Demand and Requirement

Item	Per Capita			Aggregate		
	Estimated	Annual supply or		Estimated	Annual supply or	
	civilian	requirement rate		civilian	requirement rate	
	demand	Jan.-	July-	demand	Jan.-	July-
	1945	June a/	Dec. b/	1945	June a/	Dec. b/
	1	2	3	4	5	6
	Pounds c/			Million pounds c/		
Strawberries	.58	.21	.31	75.0	27.5	40.0
Raspberries	.19	.15	.17	25.0	19.1	22.0
Blackberries	.08	.06	.06	10.0	7.9	8.0
Other berries	.15	.13	.11	20.0	17.1	15.0
Total	1.00	.55	.65	130.0	71.6	85.0
Cherries	.35	.35	.33	45.0	45.4	43.0
Apples	.27	.27	.21	35.0	34.6	28.0
Apricots	.15	.17	.14	20.0	21.9	18.0
Grape pulp & juice	.15	.15	.14	20.0	19.2	19.0
Peaches	.19	.19	.17	25.0	25.3	22.0
Other	.20	.20	.19	25.0	26.0	25.0
Total	1.31	1.33	1.18	170.0	172.4	155.0
Grand Total	2.31	1.88	1.83	300.0	244.0	240.0

a/ Prospective 1944-45 civilian supply as reflected by R&AC blue sheets, dated October 7, 1944.

b/ Requested 1945-46 civilian allocation.

c/ Processed weight.

space occupied by such items on October 1, 1943. Thus, the 1945-46 requirement has been placed at 240 million pounds as compared with an estimated 1945 demand of 300 million pounds and an estimated 1944-45 civilian supply of about 244 million pounds. The requirement consists of 40 million pounds of strawberries, 45 million pounds of all other berries, 43 million pounds of cherries, and 112 million pounds of apples, apricots, grapes, peaches, and other fruits (table 45).

In view of the anticipated short supply of strawberries, the civilian requirement for this item has been submitted at a level approximating one-half of the demand. Altogether, the 1945-46 requirement for frozen fruits is calculated to supply most of the essential needs of the preserve industry, a part of the demands of the baking and confectionery industries, and to provide home and institutional users at about the same rate as during the past year. Inability to expand refrigeration facilities for handling frozen foods in wholesale and retail establishments will continue to limit the quantity distributed for household and institutional use during the coming year.

Problems of Distribution

The most acute problem in distributing a short supply of frozen fruits is that of providing preservers with the fruit required to produce the quantity of jams, jellies, and other spreads needed to maintain the current consumption of bread and other cereal products.

Because of the generally short civilian supply of all processed fruits, frozen fruits were rationed together with canned and dried fruits, during a portion of 1943 and 1944. However, when the urgent need for freezer space for meats and other high priority products made it desirable that frozen fruits and vegetables be moved out of cold storage space at a more rapid rate, these frozen foods were removed from rationing in April 1944. Thus, at present there is no restriction upon the use of frozen fruits by ice cream manufacturers, bakeries, and other industrial users.

Since frozen fruits for direct consumption by hotels, restaurants, and in homes serve mainly to supplement the quantities of fresh and canned fruits available, no special difficulty is anticipated if supplies are scarce.

All told, the civilian requirement for frozen fruits has been indicated at about 20 percent less than the estimated civilian demand, due principally to the shortage of freezer space and the low prospective supply of strawberries. Were it not for these circumstances and the fact that refrigeration facilities for handling frozen foods in wholesale and retail establishments are limited for the duration, a substantially larger volume of frozen fruits could be marketed without difficulty.

DRIED FRUIT

Consumption in Recent Years

Annual consumption of dried fruit averaged nearly 6 pounds per capita for the period 1935-39. Since then, the heavy requirements for military and export purposes have diminished the quantities available to civilians to about 4 pounds per capita, except in 1943-44 when an unprecedented production of raisins made possible an over-all civilian supply of about 6 pounds of dried fruit per capita (table 46).

In terms of aggregates, civilians consumed an average of 368,400 tons of dried fruits annually during the period 1935-39, as compared with 295,300 in 1942-43, 399,900 in 1943-44, and an estimated supply of 336,800 tons in 1944-45. Civilians have received since 1941-42 only small quantities of such domestically produced dried fruits as apples, apricots, peaches, and pears, while the wartime decline in imports has reduced the supply of dates available (table 46).

Normally, about 75 percent of the dried fruit consumption consists of prunes and raisins (including currants). Of the remainder, more than half consists of dates and figs, while the cut fruits (peaches, apricots, apples, and pears) account for the balance.

Demand and Requirement for 1945

Under the prevailing food and income situation, it is estimated that civilian demand for dried fruits in 1945 will total at least 357,000 tons in aggregate, or 5.4 pounds per capita. This is based on an estimated demand for 265,000 tons of raisins, currants, and dried prunes, 50,000 tons of dates and dried figs, and 42,000 tons of the cut fruits (table 47).

The demand for raisins and currants in recent years has exceeded normal usage, largely because a substantial portion of the raisins for civilians is used in manufactured foods, such as bread, cookies, and candy. Since the maintenance of a high level of bread consumption is being encouraged by the War Food Administration, the availability of raisins for use in bread makes possible greater variety in the types of bread produced and thereby stimulates consumption. Dried prunes are consumed primarily in homes and institutions, and the demand is expected to remain close to 110,000 tons per annum.

The marketing year for most dried fruits begins in September. This means that civilian supplies for the first

Table 46 --DRIED FRUITS: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	Apparent Civilian Consumption					
	1932	1935-39	1941	1942	1943	1944 a/
	1	2	3	4	5	6
	Pounds per capita b/					
Apples	0.08	0.16	0.08	c/	0.07	c/
Apricots	.31	.25	.17	c/	.04	.11
Dates	.39	.44	.21	.19	.14	.39
Figs	.29	.35	.38	.45	.40	.38
Peaches	.31	.29	.10	c/	.13	.17
Pears	.02	.03	c/	c/	c/	.02
Prunes	1.77	1.87	1.36	1.63	2.31	1.79
Raisins & currants	2.31	2.28	1.69	2.25	3.09	2.34
Total	5.48	5.67	3.99	4.52	6.18	5.20
	Thousand tons b/					
Apples	4.8	10.3	5.2	d/	4.5	0.2
Apricots	19.4	16.1	11.5	d/	2.2	7.4
Dates	24.8	28.8	13.9	12.4	9.2	25.5
Figs	17.9	22.6	25.1	29.7	26.0	24.3
Peaches	19.4	19.0	6.8	d/	8.6	11.0
Pears	1.2	1.9	d/	d/	.1	1.2
Prunes	111.1	121.6	90.8	106.3	149.6	115.7
Raisins & currants	145.0	148.1	112.4	146.9	199.7	151.5
Total	343.6	368.4	265.7	295.3	399.9	336.8

a/ Based on allocation from 1944 crop.

b/ Processed weight.

c/ Less than 0.005 pound.

d/ Less than 0.05 thousand tons.

Table 47 --DRIED FRUITS: Civilian Demand and Requirements for 1945

Item	Per Capita			Aggregate		
	: Estimated: Annual allocation			: Estimated: Annual allocation		
	: civilian :or requirement rate:			: civilian :or requirement rate		
	: demand :Jan.- : Oct.-			: demand :Jan.- : Oct.-		
	: 1945 :Sept. a/: Dec. b/			: 1945 :Sept. a/: Dec. b/		
	: 1	: 2	: 3	: 5	: 6	: 6
	Pounds <u>c/</u>			Thousand tons <u>c/</u>		
Apples	.15	d/	e/	10.0	0.2	e/
Apricots	.23	.11	e/	15.0	7.4	e/
Dates	.38	.39	e//	25.0	25.5	e/
Figs	.38	.38	e/	25.0	24.3	e/
Peaches	.23	.17	e/	15.0	11.0	e/
Pears	.03	.02	e/	2.0	1.2	e/
Prunes	1.67	1.79	1.59	110.0	115.7	105.0
Raisins & currants	2.35	2.34	2.28	155.0	151.5	150.0
Total	5.42	5.20	5.01	357.0	336.8	330.0

a/ Based on 1944-45 allocation from 1944-45 supplies - (R&AC Green Sheets, December 13, 1944).

b/ Requested 1945-46 allocation from 1945-46 supplies.

c/ Processed weight.

d/ Less than 0.005 pound.

e/ Will accept residual provided total requirement for group is satisfied.

8 months of 1945 were determined by the 1944-45 allocation while those for the last 4 months of 1945 will be governed by the 1945-46 allocation, or the quantities available from the 1945 pack plus carry-over stocks.

Distribution of dried apples, apricots, peaches, pears, prunes, raisins, and currants to civilians is subject to the regulations of War Food Orders 16 and 17. Actual releases of supplies by packers for commercial distribution must be authorized by the War Food Administration. It has been the general policy during the 1944-45 marketing year to release the civilian share of the pack as early as practicable, thus enabling the heaviest consumption to occur as normally during the winter months.

In computing the civilian requirement for dried fruits during the 1945-46 marketing year, consideration was given to the probable allocable supply, to the dietary significance of dried fruits, to the problems of distributing a short supply, and to the kinds of dried fruits most needed for military and export purposes.

The aggregate civilian requirement for all dried fruits during the 1945-46 marketing year has been set at 330,000 tons as compared to an estimated demand of 357,000 tons and an estimated civilian supply of 336,800 tons during the 1944-45 marketing year (table 47).

Specific requirements for raisins and dried prunes for 1945-46 have been submitted at 150,000 and 105,000 tons, respectively. These quantities are slightly lower than the respective civilian supplies for 1944-45, when raisins and prunes accounted for a larger than usual proportion of the civilian supply of dried fruits. The over-all requirement for 1945-46 includes a request for 75,000 tons of cut fruits, dates, and figs to be supplied in any combination available.

The demand for raisins for use in bakery products and other processed foods and the need for dried prunes for direct home use make it desirable to continue to provide civilians with substantial quantities of these dried fruits. It is assumed that U. S. civilians will receive from the 1944-45 production, as in the past two seasons, virtually the entire pack of dried figs. It is also assumed that civilians will receive the bulk of the domestic pack of dates and that some imported supplies will be available. Although it is estimated that there will be a demand for substantial quantities of the cut fruits, it is unlikely that civilians in 1945-46 will receive the quantities of these items normally consumed.

Problems of Distribution

Distribution of dried fruits is highest during the late fall, winter, and spring months when loss from insect infestation is least likely to occur, and when the supply of fresh deciduous fruits is limited.

Because of the greater risk from spoilage during warm weather, dried fruits do not lend themselves as readily to a program of rationing in case of a shortage as do canned fruits. This is particularly true in the South where facilities are inadequate oftentimes to maintain distribution during hot weather without loss of spoilage.

Moreover, the dried fruit industry normally counts on greatly expanded sales to household and institutional users during November and December for the holiday trade. This applies particularly to such items as raisins, currants, dates, figs, and apricots.

Sales to industrial users also are at their best during the fall and winter months, since most of the large users customarily buy their annual requirements early in the marketing year. This enables them to plan their production and to take advantage of the holiday demand for dried fruit products.

For these reasons, it is especially desirable that the civilian supply of dried fruits be released for commercial distribution as early in the marketing year as is possible in the face of wartime requirements and restrictions.

Should changes in the war situation result in substantially lower requirements for dried fruits for military or lend-lease purposes, special programs may be needed to obtain optimum domestic distribution of some of the items that are in heavy supply, unless pre-war commercial export markets can be re-established.

PRESERVES
(Prepared by Isabelle M. Kelley)

Significance to the Food Supply

Preserves play an important role in the national food program since they add variety and palatability to other foods. Their most important use is as a breadspread. During the past 3 years civilians have consumed larger than pre-war quantities of preserves, when available, to fill the gap in our supply of spreads caused by the reduction in the supply of butter. Since civilians are consuming larger supplies of bread it is essential that supplies of breadspreads be made available in adequate quantity. Recognizing that it is not necessary to provide an increase in the supply of spreads comparable to that of bread (which has been conservatively estimated at 5 percent), we have endeavored to keep the total supply of the four major breadspreads (butter, margarine, peanut butter, and preserves) at approximately pre-war levels.

Consumption in Recent Years

Actual data as to the consumption of preserves are not available prior to 1943. However, trade estimates indicate that from the 1941 pack civilians consumed approximately 400 million pounds of preserves, or 3.0 pounds per capita (table 48). It is estimated that approximately the same quantity was available to civilians from the 1942 pack, since purchases by the military were exceptionally heavy and absorbed the increase in the pack. Supplies of preserves for civilian use were extremely scarce until late in 1943 when sugar for preserve production was made available on a provisional basis under the rationing regulations. Rationing controls on their distribution were established at the same time. During 1944 production of preserves increased sharply, and the picture for civilians changed from scarcity to abundance. Rationing controls were removed from some preserve items in the middle of 1944, and on September 17 all preserves were removed from rationing restrictions.

Table 48.--PRESERVES: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	Apparent civilian consumption a/			
	1941	1942	1943	1944
	1	2	3	4
----- Per Capita (Pounds) -----				
Jams	1.4	b/	2.0	2.1
Jellies	1.1	b/	1.3	1.2
Marmalade	0.1	b/	0.5	0.4
Fruit butters	0.4	b/	0.4	0.4
Total	3.0	2.9	4.2	4.1
----- Aggregate (Million pounds) -----				
Jams	200	b/	255	265
Jellies	142	b/	160	160
Marmalade	8	b/	70	55
Fruit butters	50	b/	55	55
Total	400	380	540	535

a/ Actual production data not available prior to 1943. For earlier years data are approximations based on trade estimates. Estimates refer to pack year beginning in July of year shown. Estimates of 1943 and 1944 consumption based on movement of preserves through wholesalers' hands and adjusted for estimated increase in retail store stocks.

b/ Not available by type of preserve. Total is tentative estimate as noncivilian purchases are not available.

Demand and Requirement for 1945

It is estimated that civilians would consume 530 million pounds of commercially produced preserves in 1945. This is slightly lower than estimated consumption during the year beginning July 1, 1943, and approximately equal to prospective consumption in the year beginning July 1, 1944. Continuance of a relatively high level of demand is based upon the expectations that supplies of butter will continue to be well below consumption in pre-war years; thus, relatively large quantities of preserves will be necessary to keep the supply of all breadspreads at a reasonably adequate level.

The requirement, as shown in table 49, totals 500 million pounds, somewhat below the estimate of the maximum quantity civilians would consume in 1945 if available. The requirement is placed at this level since there appears to be little possibility of producing all of the berry preserves that civilians would be willing to purchase.

Table 49.--PRESERVES: Civilian Demand and Requirement, 1945

Item	Per capita		Aggregate	
	Demand	Requirement	Demand	Requirement
	1	2	3	4
	pounds		mil. lbs.	
Jams	2.2	2.0	280	260
Jellies	1.2	1.1	160	150
Marmalade	0.3	0.3	40	40
Fruit Butter	0.4	0.4	50	50
Total	4.1	3.8	530	500

Problems of Distribution

There appears to be little difficulty in producing this quantity of preserves for civilians in 1945. While it is of prime importance to provide a fully adequate quantity of preserves, it is also important to provide the varieties most acceptable to the public. Unusual varieties, and especially large quantities of unusual or less popular varieties, are difficult to move into consumption channels even though the overall preserve supply is short. During 1945 every effort should be made to direct production of preserves away from the less popular varieties, which were produced in such large quantities in 1944, to avoid the accumulation of stocks of these types of preserves which will become increasingly difficult to move when both civilian and military demand declines from the peak wartime level.

VEGETABLES

(Prepared by Oscar R. LeBeau and Wm. R. Whitacre)

Significance to the Food Supply

Vegetables constitute one of the important commodity groups in the civilian food supply in terms of volume. They make important contributions of vitamin A, ascorbic acid, and certain minerals. Equally significant is the role they play in adding variety and palatability to the diet.

Canned vegetables are important as a means of supplementing the off-season supplies of fresh vegetables. They provide also an economical source of ready prepared food for institutional and household use. Frozen vegetables serve approximately the same uses as do canned vegetables except that they are generally more expensive and constitute a much smaller volume. The primary use of dehydrated vegetables for the civilian market has been in the manufacture of dry-mix and dehydrated soups.

For the purpose of this discussion, vegetables have been grouped as (a) green and yellow, (b) tomatoes, (c) onions, and (d) other.

Green and yellow vegetables: These vegetables are an excellent source of vitamin A and ascorbic acid. Approximately one-third of the vitamin A and one-fifth of the ascorbic acid in the 1944 average diet were obtained from this source. These vegetables also furnish appreciable amounts of minerals and other vitamins. They are particularly important as a source of calcium in those areas where the milk supply is inadequate.

Tomatoes: Tomatoes are roughly comparable with citrus fruits in nutritive value, although the ascorbic acid in tomatoes is less concentrated. There is much less destruction of this vitamin in the preparation and serving of tomatoes and citrus than is the case with other foods containing this vitamin. Tomatoes are essential, especially to the low income groups, when citrus fruits are in short supply.

Onions: Onions are important principally for their flavoring and seasoning qualities. They serve particularly to improve the palatability of some of the more staple foods such as potatoes and meat.

Other vegetables: These provide fairly substantial quantities of vitamin A, ascorbic acid, and iron, although they are inferior in these respects to the green and yellow vegetables. They also contribute variety to the diet and serve as important supplementary foods.

FRESH VEGETABLES

Consumption in Recent Years

One of the most noticeable changes in the American diet in the last 25 years has been the increased consumption of fresh vegetables. This reflects the emphasis given to the nutritional value of vegetables through public educational programs.

Fresh vegetable supplies are obtained from 4 major sources: (a) the reported commercial acreage, (b) market gardens near cities, (c) farm home gardens, and (d) nonfarm home gardens. The U. S. D. A. Crop Reporting Board publishes production data only regarding the reported commercial acreage. To obtain an over-all picture of the total vegetable consumption data are needed also regarding the quantities derived from the other 3 sources. Such estimates have been prepared with the assistance of the Bureau of Agricultural Economics (tables 52 and 53).

These estimates indicate that market garden production, or the unreported commercial production of vegetables that occurs near towns and cities, accounts for about 75 percent as much fresh produce for direct civilian consumption as does the reported commercial production. Farm home garden production has increased moderately during the recent war years while nonfarm home garden production has increased sharply. Home garden production has been particularly significant in providing larger supplies of fresh tomatoes, snap beans, and greens than would otherwise have been available.

Civilian consumption of fresh vegetables (excluding melons and potatoes) from all sources has increased steadily during the last decade from an estimated average of 212 pounds per capita during 1935-39 to about 250 pounds in 1944. Of these quantities, the reported commercial production furnished an average of 76 pounds per capita during 1935-39 and about 82 pounds per capita in 1944.

A significant proportion of the increased consumption of commercially produced fresh vegetables is accounted for by the substantial increase in the supplies of fresh winter vegetables which reached an all time high in 1944.

While the over-all trend of fresh vegetable consumption has been markedly upward, the trend of the individual items has differed considerably. For instance, consumption of celery, lettuce, and carrots has increased while that of fresh peas and spinach has decreased and cabbage remained relatively

Table 50 --FRESH VEGETABLES: Civilian Per Capita Annual Consumption
from Reported Commercial Production for Specified Periods

Item and Source	Apparent Civilian Consumption a/					
	1932	1935-39	1941	1942	1943	1944 b/
	1	2	3	4	5	6
-----Pounds per capita c/ d/ e/-----						
From Reported Commercial Production Only f/						
<u>Green & Yellow</u>						
Asparagus	1.2	1.0	1.1	1.0	0.9	0.9
Beans, green lima	.3	.3	.4	.4	.2	.2
Beans, snap	2.7	3.3	3.0	3.4	3.7	3.9
Cabbage	15.0	15.5	13.7	15.3	14.5	17.6
Carrots	4.1	5.5	6.0	5.7	7.6	6.0
Kale	.2	.1	.1	.1	.1	.1
Lettuce	9.7	11.0	12.1	12.0	12.0	14.1
Peas	2.0	2.0	1.7	1.2	1.2	1.4
Peppers	.6	1.0	1.0	.9	.8	.9
Spinach	2.0	2.0	1.3	1.6	1.4	1.3
Total	37.8	41.7	40.4	41.6	42.4	46.4
<u>Tomatoes</u>	9.5	10.0	10.1	10.8	11.2	10.4
<u>Onions</u>	9.0	10.5	10.2	10.2	9.7	12.0
<u>Other</u>						
Artichokes	.2	.3	.2	.3	.2	.2
Beets	.8	.8	.8	.5	.5	.5
Cauliflower	2.2	2.3	2.2	2.5	1.8	1.7
Celery	7.0	7.5	8.9	8.1	7.4	8.1
Corn (sweet)	1.4	1.2	1.5	1.2	1.0	.9
Cucumbers	1.6	1.7	1.8	1.7	1.2	1.4
Eggplant	.3	.3	.3	.2	.2	.2
Garlic	g/	g/	.2	.2	.1	.2
Shallots	g/	g/	.1	.1	.1	.1
Other	h/	h/	h/	h/	h/	h/
Total	13.5	14.1	16.0	14.8	12.5	13.3
Grand Total	69.8	76.3	76.7	77.4	75.8	82.1

a/ Calendar year basis.

b/ Preliminary.

c/ Farm weight basis.

d/ Includes imports.

e/ Based on total civilian population.

f/ For estimated supplies from other sources see subsequent table.

g/ No data available.

h/ Total supply of miscellaneous vegetables included in market and farm garden supplies on next page.

Table 51 --FRESH VEGETABLES: Civilian Aggregate Annual Consumption
from Reported Commercial Production for Specified Periods

Item	Apparent Civilian Consumption a/					
	1932	1935-39	1941	1942	1943	1944 b/
	1	2	3	4	5	6
-----Thousand tons c/ d/ e/-----						
From Reported Commercial Production Only f/						
Green & Yellow						
Asparagus	75.0	62.5	73.1	68.2	59.5	56.1
Beans, green lima	20.0	21.5	25.9	25.2	15.8	14.9
Beans, snap	170.5	211.0	202.3	225.4	240.1	251.5
Cabbage	937.5	1,006.0	909.5	1,013.2	937.0	1,141.4
Carrots	258.0	356.0	395.3	376.1	488.6	389.4
Kale	9.5	5.0	7.5	2.9	4.6	4.9
Lettuce-escarole	606.0	717.0	801.5	793.9	777.3	910.2
Peas	121.5	132.0	112.4	78.3	75.5	93.6
Peppers	49.5	64.0	65.1	60.8	54.5	58.0
Spinach	124.5	128.0	90.6	107.0	92.8	83.1
Total	2,372.0	2,703.0	2,683.2	2,751.0	2,745.7	3,003.1
Tomatoes	597.0	646.0	671.6	717.2	723.8	778.8
Onions	559.0	680.0	675.8	678.0	631.1	675.5
Other						
Artichokes	11.5	19.0	14.0	17.3	16.5	15.2
Beets	51.0	53.0	50.7	30.5	30.9	34.6
Cauliflower	135.0	149.0	149.0	163.4	112.5	106.9
Celery	441.5	483.5	591.6	538.4	478.6	521.6
Corn (sweet)	86.5	77.5	99.1	80.9	65.9	59.5
Cucumbers	100.5	113.0	117.7	111.2	78.3	87.6
Eggplant	17.0	18.0	19.0	13.4	11.6	13.9
Garlic	g/	g/	11.3	13.6	8.1	12.4
Shallots	g/	g/	6.2	8.5	5.6	5.2
Other	h/	h/	h/	h/	h/	h/
Total	343.0	913.0	1,058.6	977.2	803.0	856.9
Grand Total	4,371.0	4,942.0	5,089.2	5,123.4	4,908.6	5,314.3

a/ Calendar year basis.

b/ Preliminary.

c/ Farm weight basis.

d/ Includes imports.

e/ Based on total civilian population.

f/ For estimated supplies from other sources see next table.

g/ No data available.

h/ Total supply of miscellaneous vegetables included in market and farm garden supplies.

Table 52 --FRESH VEGETABLES: Estimated Per Capita Annual Supply Available to Civilians from Market and Home Garden Production, in Addition to Apparent Civilian Consumption from Reported Commercial Production, for Specified Years

		Estimated Annual Civilian Supply a/					
Vegetable Group :		1932 :	1935-39 :	1941 :	1942 :	1943 :	1944 b/
and Source :		1 :	2 :	3 :	4 :	5 :	6 :
		-----Pounds per capita c/ d/ e/-----					
Green & Yellow Vegetables f/							
Market garden		19.2	21.8	21.5	25.1	21.0	22.1
Farm home garden		26.8	24.3	25.2	27.9	25.8	27.2
Nonfarm home garden		5.5	5.5	5.5	11.6	17.8	17.8
Subtotal		51.5	51.6	52.2	64.6	64.6	67.1
Reported commercial		37.8	41.7	40.4	41.6	42.4	46.4
Total		89.3	93.3	92.6	106.2	107.0	113.5
Tomatoes							
Market garden		6.9	8.2	9.3	8.5	8.2	8.5
Farm home garden		11.1	10.1	10.4	10.8	10.9	10.9
Nonfarm home garden		1.9	1.9	1.9	4.0	6.1	6.0
Subtotal		19.9	20.2	21.6	23.3	25.2	25.4
Reported commercial		9.5	10.0	10.1	10.8	11.2	10.4
Total		29.4	30.2	31.7	34.1	36.4	35.8
Onions							
Market garden		5.6	6.5	6.3	7.2	5.2	6.2
Farm home garden		6.4	5.7	6.7	6.9	6.7	7.1
Nonfarm home garden		g/	g/	g/	g/	g/	g/
Subtotal		12.0	12.2	13.0	14.1	11.9	13.3
Reported commercial		9.0	10.5	10.2	10.2	9.7	12.0
Total		21.0	22.7	23.2	24.3	21.6	25.3
Other h/							
Market garden		22.2	25.6	27.5	29.5	26.3	24.1
Farm home garden		24.6	21.8	23.6	25.1	24.6	26.6
Nonfarm home garden		4.2	4.2	4.2	7.8	11.6	11.3
Subtotal		51.0	51.6	55.3	62.4	62.5	62.0
Reported commercial		13.5	14.1	16.0	14.8	12.5	13.3
Total		64.5	65.7	71.3	77.2	75.0	75.3
Total All Vegetables							
Market garden		53.9	62.1	64.6	70.3	60.7	60.9
Farm home garden		58.9	61.9	65.9	70.7	68.0	71.8
Nonfarm home garden		11.6	11.6	11.6	23.4	35.5	35.1
Subtotal		124.4	135.6	142.1	164.4	164.2	167.8
Reported commercial		69.8	76.3	76.7	77.4	75.8	82.1
Grand Total		204.2	211.9	218.8	241.8	240.0	249.9

a/ Calendar year basis. b/ Preliminary. c/ Farm weight basis.
d/ Includes imports. e/ Based on total civilian population. f/ Including asparagus, lima beans, snap beans, cabbage, carrots, kale, lettuce, peas, peppers, and spinach. g/ Included under "other vegetables"
h/ Including beets, cauliflower, celery, sweet corn, cucumbers, eggplant, and all minor vegetables and excluding small fruit, melons and potatoes.

Table 53 --FRESH VEGETABLES: Estimated Aggregate Annual Supply Available to Civilians from Market and Home Garden Production, in Addition to Apparent Civilian Consumption from Reported Commercial Production for Specified Years

:		Estimated Annual Civilian Supply a/					
Vegetable Group:	1932	1935-39	1941	1942	1943	1944 b/	
and Source	1	2	3	4	5	6	
-----Thousand tons c/ d/ e/-----							
Green & Yellow Vegetables f/							
Market garden	1,208	1,412	1,423	1,660	1,362	1,427	
Farm home garden	1,684	1,578	1,672	1,844	1,674	1,759	
Nonfarm home garden	346	358	365	768	1,157	1,150	
Subtotal	3,238	3,348	3,460	4,272	4,193	4,336	
Reported commercial	2,372	2,703	2,683	2,751	2,746	3,003	
Total	5,610	6,051	6,143	7,023	6,939	7,339	
Tomatoes							
Market garden	431	529	619	563	530	550	
Farm home garden	698	656	693	715	704	705	
Nonfarm home garden	117	121	123	262	398	390	
Subtotal	1,246	1,306	1,435	1,540	1,632	1,645	
Reported commercial	597	646	671	717	724	779	
Total	1,843	1,952	2,106	2,257	2,356	2,424	
Onions							
Market garden	354	422	416	473	340	400	
Farm home garden	401	369	444	459	435	457	
Nonfarm home garden	g/	g/	g/	g/	g/	g/	
Subtotal	755	791	860	932	775	857	
Reported commercial	559	680	676	678	631	675	
Total	1,314	1,471	1,536	1,610	1,406	1,532	
Other							
Market garden	1,392	1,659	1,821	1,953	1,706	1,665	
Farm home garden	1,545	1,414	1,533	1,663	1,599	1,718	
Nonfarm home garden	262	270	276	518	751	730	
Subtotal	3,199	3,343	3,660	4,134	4,056	4,113	
Reported commercial	843	913	1,059	977	808	857	
Total	4,042	4,256	4,719	5,111	4,864	4,970	
Total All Vegetables							
Market garden	3,385	4,022	4,279	4,649	3,938	4,042	
Farm home garden	4,328	4,017	4,372	4,681	4,412	4,639	
Nonfarm home garden	725	749	764	1,548	2,306	2,270	
Subtotal	8,438	8,788	9,415	10,878	10,656	10,951	
Reported commercial	4,371	4,942	5,089	5,123	4,909	5,314	
Grand Total	12,809	13,730	14,504	16,001	15,565	16,265	

a/ Calendar year basis. b/ Preliminary. c/ Farm weight basis. d/ Includes imports. e/ Based on total civilian population. f/ Including asparagus, lima beans, snap beans, cabbage, carrots, kale, lettuce, peas, peppers, and spinach. g/ Included under "other vegetables". h/ Including beets, cauliflower, celery, sweet corn, cucumbers, eggplant, and all other minor vegetables and excluding small fruit, melons and potatoes.

constant. Further details regarding the per capita and aggregate civilian consumption of fresh vegetables are given in tables 50 through 53.

Demand and Requirement for 1945

Civilian demand for fresh vegetables in 1945 is expected to continue at a level approximating the record consumption of 1944.

Estimates regarding the 1945 demand for fresh vegetables from the reported commercial production obviously must be predicated on certain assumptions regarding the volume of vegetables that may be expected from sources other than the reported commercial production. It is assumed that the 1945 market garden production will approximate that of 1944 when there was a strong demand for fresh, locally produced vegetables. With continued emphasis on "Victory" gardens in 1945 and the partial resumption of the rationing of canned vegetables, supplies from farm home gardens are expected to equal the 1944 production while supplies from nonfarm home gardens may be down slightly (table 55).

Under these circumstances, it is estimated that the 1945 per capita civilian demand for fresh vegetables from reported commercial acreage will amount to about 82 pounds or roughly the same as the quantity consumed from this source in 1944. This amounts to an aggregate demand of 5,303,500 tons as compared to the 5,314,300 tons estimated consumed last year.

In view of the perishability of fresh vegetables, the expanded production that has occurred during recent years and the marketing problems that would result from an over-supply, the 1945 civilian requirement for fresh vegetables from reported commercial acreage has been conservatively established at 4,816,000 tons or about 74 pounds per capita. This requirement is distributed among the various vegetables as indicated in table 54.

Problems of Distribution

Adequate supplies afford the best assurance that fresh vegetables can be made available in all areas at reasonable prices. However, the production of these perishable foods is attended by many uncertainties regarding weather, fertilizer supply, labor supply, and a host of other variables. A combination of unfavorable circumstances could readily lead to a scarcity of fresh vegetables, while high yields on the same acreage might result in surplus supplies. Unexpected surpluses can quickly lead to excessive waste and to unreasonably low returns to growers and distributors. Thus, a middle course must be pursued in planning production.

Table 54 --FRESH VEGETABLES: Civilian Demand and Requirement for 1945 from Commercial Production

Item	: Per Capita :		: Aggregate :	
	: Estimated :	: Annual :	: Estimated :	: Annual :
	: civilian :	: require-	: civilian :	: require-
	: demand :	: ment a/ :	: demand :	: ment a/ :
	: 1 :	: 2 :	: 3 :	: 4 :
Pounds b/		Thousand tons b/		
From Reported Commercial				
Production Only				
Green & Yellow				
Asparagus	1.0	0.8	65.0	52.0
Beans, green lima	.4	.3	26.0	19.5
Beans, snap	3.8	3.4	247.0	221.0
Cabbage	15.5	15.2	1,007.4	987.9
Carrots	5.8	5.5	377.0	357.5
Kale	.1	.1	6.5	6.5
Lettuce	11.5	10.7	747.4	695.4
Peas	1.7	1.5	110.5	97.5
Peppers	1.0	.8	65.0	52.0
Spinach	1.6	1.5	104.0	97.5
Total	42.4	39.8	2,755.8	2,586.8
Tomatoes	11.0	10.5	714.9	682.4
Onions c/	12.0	10.3	779.9	669.4
Other				
Artichokes	.2	.2	13.0	13.0
Beets	1.8	.6	117.0	39.0
Cauliflower	2.5	2.2	162.5	143.0
Celery	8.0	7.6	519.9	493.9
Corn (sweet)	1.5	1.2	97.5	78.0
Cucumbers	1.5	1.2	97.5	78.0
Eggplant	.3	.2	19.5	13.0
Garlic	.2	.2	13.0	13.0
Shallots	.2	.1	13.0	6.5
Other	d/	d/	e/	e/
Total	16.2	13.5	1,052.9	877.4
Grand Total	81.6	74.1	5,303.5	4,816.0

a/ These requirements from reported commercial production are based on the assumption that additional supplies of fresh vegetables will be available from market garden, farm garden, and nonfarm garden production as indicated in the next table. b/ Farm weight basis.

c/ Estimated quarterly requirements for fresh onions:

	Tons	Percentage
January-to-March	160656	24
April-to-June	153962	23
July-to-September	177350	25
October-to-December	187432	28

d/ No specific requirement requested. e/ Total supply of miscellaneous vegetables included in market and farm-garden supplies.

Table 55 --FRESH VEGETABLES: Estimated Supplies
for 1945 from Sources Other than
Reported Commercial Production

Vegetable Group & Source	: Per Capita a/	: Aggregate
	: Estimated	: Estimated
	: supplies	: supplies
	: 1	: 2
	- - Pounds b/	- -Thous. tons b/-
<u>Green & Yellow Vegetables c/</u>		
Market garden	21.9	1,425
Farm home garden	26.9	1,750
Nonfarm home garden	16.0	1,040
Total	64.8	4,215
<u>Tomatoes</u>		
Market garden	8.5	550
Farm home garden	10.8	700
Nonfarm home garden	5.4	350
Total	24.7	1,600
<u>Onions</u>		
Market garden	6.2	400
Farm home garden	6.9	450
Nonfarm home garden	d/	d/
Total	13.1	850
<u>Other Vegetables e/ f/</u>		
Market garden	25.5	1,660
Farm home garden	26.3	1,710
Nonfarm home garden	10.2	660
Total	62.0	4,030
<u>Total all Vegetables f/</u>		
Market garden	62.1	4,035
Farm home garden	70.9	4,610
Nonfarm home garden	31.6	2,050
Total	164.6	10,695

a/ Based on total civilian population.

b/ Farm weight.

c/ Including asparagus, lima beans, snap beans, cabbage, carrots, kale, lettuce, peas, peppers, and spinach.

d/ Included under "other vegetables."

e/ Including beets, cauliflower, celery, sweet corn, cucumbers, eggplant, and all minor vegetables.

f/ Excluding small fruit, melons, and potatoes.

Whatever the production, ample marketing facilities such as containers, motor trucks, refrigerator cars, and adequate manpower must be available to handle supplies promptly if losses are to be held to a minimum. Present prospects are that most of these facilities will continue in tight supply and that all available resources will have to be utilized to a maximum throughout 1945.

Inadequate supplies would mean that many low income groups and families in remote areas would have difficulty in obtaining the fresh produce needed. Short supplies also lead to a general lowering of marketing standards and tend to encourage black market operations. Compliance regarding ceiling prices is more readily attained when the supply is not too far short of the demand level.

Federal assistance in the form of transportation subsidies may be desirable in some instances to obtain satisfactory regional and seasonal distribution of an item in short supply. In the case of the short 1943 onion crop, a limitation order on the movement and use of the supply was helpful in obtaining optimum distribution. Repetition of this plan may be useful in the future for commodities where conservation and equitable distribution of a short supply is of importance to a large number of household and industrial users.

While it appears that vegetable producers can expect a generally favorable market in 1945, seasonal surpluses are likely to occur at various times. Plans for the orderly distribution of these products should be in readiness in case Government assistance becomes necessary. Promotional programs stimulating the consumption of plentiful food items can aid in achieving maximum utilization of available supplies. Government purchases for direct distribution also may be needed to relieve congested markets and to clear up temporary surpluses.

CANNED VEGETABLES AND RELATED PRODUCTS

Consumption in Recent Years

Civilian consumption of canned vegetables and related products followed a steady upward trend during the decade prior to 1942 when war needs no longer made this possible.

Annual consumption of canned vegetables, exclusive of related products, increased from an average of 31 pounds per capita during 1935-39 to a peak of about 37 pounds per capita in 1941-42. Since then the heavy requirements for military and export purposes and the need for restricting the use of tin have diminished the quantities available to civilians to a point where in 1944-45 they were allocated only about 31 pounds of canned vegetables per capita (table 56). In terms of aggregates, civilians consumed a total of about 167 million cases (basis 24/2's) in 1941-42 compared with an allocation of about 136 million cases in 1944-45 and an average annual consumption of 135 million cases during 1935-39 (table 57).

The 4 major canned vegetables in terms of volume are tomatoes, peas, corn, and snap beans. Despite the large quantities required to be set-aside for war purposes, these 4 items have continued to account for a major proportion of the civilian canned vegetable supply as evidenced by the fact that they comprised 85 percent and 76 percent, respectively, of the estimated civilian canned vegetable consumption in 1943-44 and 1944-45, as compared to an average of 74 percent during the period 1935-39.

Canned whole tomatoes and tomato products alone comprised about 39 and 38 percent, respectively, of the 1943-44 and the 1944-45 civilian supply of canned vegetables. Tomato juice and catsup are the most important tomato products next to whole tomatoes. Consumption of tomato pulp, puree, paste and sauce also has increased in recent years. This is partly because these products can be produced with less labor than canned whole tomatoes.

Among the leading minor canned vegetables are asparagus, spinach, and beets. These, plus a dozen lesser vegetables, help to round out the civilian supply of commercially canned vegetables.

Civilian consumption of the so called related products: canned baby foods, soups, pickles, and baked beans has ranged from 50 to 75 million cases per annum for the past decade. Sales of canned baby foods have expanded rapidly during the last few years. Consumption of canned soups, pickles, and baked beans was highest in 1941-42. Since then, wartime

Table 56 --CANNED VEGETABLES: Civilian Per Capita Annual Consumption for Specific Periods

Item	Apparent Civilian Per Capita Consumption a/					
	1932	1935-39	1941	1942	1943	1944 b/
	1	2	3	4	5	6
-----Pounds per capita (processed)-----						
<u>Green & Yellow</u>						
Asparagus	0.5	0.5	0.6	0.6	0.6	0.6
Beans, lima	.2	.4	.5	.5	.2	.1
Beans, snap	1.1	2.0	2.3	3.0	3.3	2.7
Carrots	.1	.2	.4	.4	.3	d/
Peas	3.0	4.7	6.5	5.7	6.6	4.7
Pumpkin & squash	.5	.5	.7	.6	.4	.6
Spinach	.4	.7	.7	.9	.9	1.3
Other greens	c/	.1	.1	.1	.2	.1
Total	5.8	9.1	11.8	11.8	12.5	10.1
<u>Tomatoes</u>						
Whole	5.5	5.9	5.0	6.1	5.0	2.4
Catsup & chili sauce	c/	2.0	2.7	2.0	1.4	2.1
Juice	1.2	2.7	4.3	4.5	3.5	3.5
Pulp & puree	.5	.7	.8	1.0	1.5	1.7
Paste	.1	.5	.3	.7	.9	.9
Sauce	c/	.3	.3	.6	1.0	1.2
Total	c/	12.1	13.4	14.9	13.3	11.8
<u>Other Vegetables</u>						
Beets	.2	.6	1.2	1.2	1.2	1.5
Corn	3.4	4.2	5.4	5.3	6.1	4.3
Hominy	c/	c/	.6	.1	.1	d/
Mixed vegetables	c/	.4	.6	.5	.3	.5
Pimientos	.1	.2	.1	.1	.1	.1
Potatoes, white	c/	c/	.1	d/	d/	d/
Potatoes, sweet	c/	c/	.4	d/	.2	.4
Sauerkraut e/	c/	1.7	2.2	1.9	.4	1.4
Soybeans	c/	c/	c/	c/	d/	d/
Succotash	c/	.1	.1	.1	f/	f/
Other vegetables	c/	2.1	.5	.1	g/	g/
Other juices	c/	.1	.2	e/	.2	.8
Total	c/	9.4	11.4	9.3	8.6	9.0
Grand Total	c/	30.6	36.6	36.0	34.4	30.9
<u>Related Products</u>						
Baby foods	c/	c/	.9	1.0	1.7 h/	2.3 h/
Soups	c/	4.6	6.8	7.1	5.0 h/	6.2 h/
Pickles e/	.6	1.9	2.9	2.8	2.0	1.8
Baked beans	c/	5.5	6.7	2.5	3.2 h/	4.9 h/
Total	c/	12.0	17.3	13.4	11.9	15.2

a/ Based on fiscal year, beginning July 1. b/ Preliminary. c/ No data available. d/ Less than 0.05 pound. e/ Includes bulk as well as canned and bottled. f/ Included in mixed vegetables. g/ Included in other vegetable juices. h/ From allocation sheets.

Table 57 --CANNED VEGETABLES: Civilian Aggregate Annual Consumption for Specified Periods

Item	Apparent Aggregate Civilian Consumption a/					
	1932	1935-39	1941	1942	1943	1944 b/
	1	2	3	4	5	6
- - - - - Million cases 24/2's - - - - -						
<u>Green & Yellow</u>						
Asparagus	2.0	2.3	3.0	3.0	2.9	2.8
Beans, lima	.7	1.6	2.2	2.3	1.0	.6
Beans, snap	4.7	8.6	10.8	13.7	15.2	12.3
Carrots	.4	.9	1.7	1.7	1.3	d/
Peas	12.4	20.6	28.9	24.7	28.2	20.2
Pumpkin & squash	1.9	2.1	3.1	2.5	1.9	2.4
Spinach	2.0	4.3	3.6	4.6	4.2	6.1
Other greens	c/	.3	.7	.5	.9	.6
Total	24.1	40.7	54.0	53.0	55.6	45.0
<u>Tomatoes</u>						
Whole	24.3	26.7	23.5	28.1	22.5	10.9
Catsup & chili sauce	c/	8.0	11.0	8.1	4.9	8.3
Juice	5.6	12.8	21.1	21.7	17.6	16.7
Pump & puree	2.3	2.9	3.5	4.4	6.8	7.8
Paste	.4	1.9	1.7	3.0	3.6	3.7
Sauce	c/	1.1	1.1	2.4	4.3	5.0
Total	c/	53.4	61.9	67.7	59.7	52.4
<u>Other Vegetables</u>						
Beets	1.0	2.7	5.5	5.4	5.1	6.5
Corn	14.1	18.3	24.0	23.0	26.3	18.6
Hominy	c/	c/	2.4	.6	.4	d/
Mixed vegetables	c/	1.9	2.5	2.2	1.3	2.2
Pimientos	.6	.8	.4	.6	.4	.5
Potatoes, white	c/	c/	.4	d/	d/	d/
Potatoes, sweet	c/	c/	2.0	d/	1.1	1.6
Sauerkraut e/	c/	7.7	10.2	8.9	1.7	6.2
Soybeans	c/	c/	c/	c/	d/	d/
Succotash	c/	.3	.4	.4	f/	f/
Other vegetables	c/	9.3	2.4	.4	g/	g/
Other juices	c/	.4	.8	.1	.7	3.5
Total	c/	41.4	51.0	41.6	37.0	39.1
Grand Total	c/	135.5	166.9	162.3	152.3	136.5
<u>Related Products</u>						
Baby foods	c/	c/	4.2	5.4	7.4 h/	9.9 h/
Soups	c/	20.0	30.0	27.4	21.4 h/	28.4 h/
Pickles e/	3.1	9.6	12.9	12.3	8.6	7.8
Baked beans	c/	22.8	28.0	10.5	12.9 h/	21.3 h/
Total	c/	52.4	75.1	55.6	50.3	67.4

a/ Based on fiscal year beginning July 1. b/ Preliminary. c/ No data available. d/ Less than 0.05 million cases. e/ Includes bulk as well as canned and bottled. f/ Included in mixed vegetables. g/ Included in other vegetable juices. h/ From allocation sheets.

restrictions on the use of tin and glass have resulted in lower civilian supplies of these items.

Demand and Requirement for 1945

The market for canned vegetables is influenced chiefly by such factors as consumer income, the supply of fresh vegetables, and the volume of home canning. It is expected that the national income in 1945 will continue at a relatively high level. It is probable that the supply of fresh vegetables from commercial and home garden sources in 1945 will be about the same or slightly lower than for 1944. Home canning will probably reflect a similar trend. Many housewives will be gainfully employed, thus increasing the demand for convenient, easily prepared foods.

Under these assumptions, it is estimated that in the absence of rationing civilian demand for canned vegetables (excluding canned baby foods, soups, pickles, and baked beans) during 1945 would aggregate about 169 million cases (basis 24/2's) or about 38 pounds per capita. It is estimated that the 4 major vegetables: tomatoes, peas, corn, and green beans would account for 130 million cases or about 77 percent of the total demand (table 58). While these demand estimates are conservative, they are considerably larger in most instances than the amounts that will be available to civilians during the first half of 1945 under the 1944-45 allocation. The supplies for the second half of the calendar year 1945 will be dependent upon the quantities available from the 1945 pack.

In determining the civilian requirement for canned vegetables for the 1945-46 pack year, consideration was given to the dietary significance of the respective items, to the probable size of the total pack, to the prospective large requirements of the military, to the estimated civilian demand, and to the quantities required to achieve reasonably good distribution.

Accordingly, the aggregate civilian requirement for canned vegetables, (exclusive of the related products) during 1945-46 has been placed at 145 million cases (basis 24/2's). This compares with an estimated civilian supply of about 136 million cases during 1944-45, an estimated civilian demand of 169 million cases, and a peak consumption during 1941-42 of about 167 million cases (table 58). The 1945-46 requirement is about 9 million cases higher than the rate at which canned vegetables will be available during 1944-45. However, the current civilian supply is considerably short of demand and stocks at the end of the pack year are expected to be unusually low. On the other hand, the 1945-46 requirement is 24 million cases lower than the estimated 1945 demand

Table 58 --CANNED VEGETABLES: Civilian Demand and Requirement for 1945

	Per Capita			Aggregate		
	Estimated:	Annual allo-	Estimated:	Annual allo-		
	civilian :	cation or	civilian :	cation or		
	demand :	requirement	demand :	requirement		
	1945	rate	1945	rate		
	Jan.-	July-	Jan.-	July-		
	June a/	Dec. b/	June a/	Dec. b/		
	1	2	3	4	5	6
	Pounds			Million cases 24/2's		
<u>Green & Yellow</u>						
Asparagus	.7	.6	c/	3.2	2.8	c/
Beans, lima	.5	.1	c/	2.2	.6	c/
Beans, snap	2.8	2.7	2.6	13.0	12.3	12.0
Carrots	.4	d/	c/	1.7	e/	c/
Peas	6.0	4.7	5.5	26.0	20.2	24.0
Pumpkin & squash	.6	.6	c/	2.8	2.4	c/
Spinach	1.1	1.3	c/	5.1	6.1	c/
Other greens	.2	.1	c/	.8	.6	c/
Total	12.3	10.1	11.0	54.8	45.0	48.0
<u>Tomatoes</u>						
Whole	5.0	2.4	4.8	23.0	10.9	22.0
Catsup & chili sauce	2.5	2.1	2.2	10.0	8.3	9.0
Juice	5.2	3.5	4.1	25.0	16.7	20.0
Pulp & puree	.9	1.7	c/	4.0	7.8	c/
Paste	.9	.9	c/	3.5	3.7	c/
Sauce	.6	1.2	c/	2.8	5.0	c/
Total	15.1	11.8	13.8	68.3	52.4	60.0
<u>Other Vegetables</u>						
Beets	1.0	1.5	c/	4.5	6.5	c/
Corn	5.3	4.3	4.8	23.0	18.6	21.0
Hominy	.5	d/	c/	2.0	e/	c/
Mixed vegetables	.5	.5	c/	2.0	2.2	c/
Pimiento	.1	.1	c/	.4	.5	c/
Potatoes, white	.1	d/	c/	.5	e/	c/
Potatoes, sweet	.3	.4	c/	1.5	1.6	c/
Sauerkraut f/	1.7	1.4	c/	8.0	6.2	c/
Soybeans	d/	d/	c/	.2	e/	c/
Succotash	.1	g/	c/	.3	g/	c/
Other vegetables	.7	h/	c/	3.0	h/	c/
Other veg. juice	.1	.8	c/	.5	3.5	c/
Total	10.4	9.0	8.5	45.9	39.1	37.0
Grand Total	37.8	30.9	33.3	169.0	136.5	145.0
<u>Related Products</u>						
Baby foods	2.3	2.3	2.0	10.5	9.9	9.0
Soups	5.8	6.2	i/	25.0	28.4	i/
Pickles	2.3	1.8	i/	10.0	7.8	i/
Baked beans	5.7	4.9	i/	23.5	21.3	i/
Total	16.1	15.2	i/	69.0	67.4	i/

a/ Based on 1944-45 allocation from 1944-45 supply. b/ Requested 1945-46 allocation from 1945-46 supply. c/ No specific requirement provided the requirement for the group is met. d/ Less than 0.05 pound. e/ Less than 0.05 million cases. f/ Includes bulk as well as canned and bottled. g/ Included in mixed vegetables. h/ Included in other vegetable juices. i/ Will accept residual supply.

because it is assumed that supplies would be inadequate to provide a larger quantity and that rationing can be continued if necessary.

The 4 major canned vegetables account for 117 million cases or about 80 percent of the total requirement. Because of the dietary importance of canned whole tomatoes, tomato juice, and other tomato products, total tomato requirements are indicated at 60 million cases or at 88 percent of the estimated demand.

The remaining 38 million cases, included in the canned vegetable requirement, may be supplied from canned asparagus, spinach, beets, and the other minor vegetables in any combination that the supply permits as long as due consideration is given to the relative demand.

Baby food is the only canned speciality for which a specific civilian requirement (9.0 million cases) is submitted. This requirement would satisfy 86 percent of the civilian demand for all types of canned baby food. No specific civilian requirements are submitted for canned baked beans, pickles, and soups. While these products are in demand as convenience foods and appetizers, their essentiality to the civilian diet does not warrant requesting more than the residual supplies after Government requirements have been fulfilled.

Problems of Distribution

The limited supply of canned vegetables available to civilians under the 1944-45 allocation means that many commercially canned vegetables will continue to be short of demand until a new supply becomes available from the 1945 pack. Until the crops for 1945 are planted, harvested, and processed, it is obviously difficult to estimate accurately what the civilian supply of canned vegetables will be during 1945-46. However, preliminary estimates indicate that the civilian supply for next year is likely to be somewhat lower than the quantity available in 1944-45.

Of the canned vegetables to be included under the set-aside order for Government procurement in 1945, it is currently estimated that civilians will receive in 1945-46 about 100 million cases, as compared with the civilian requirement of 135 million cases and an estimated 1944-45 supply of 118 million cases for the same group of items.

On the whole, point rationing has been an effective means of controlling the distribution of a short supply of canned vegetables. One of the principal problems that will be encountered in 1945 in the distribution of canned vegetables under rationing relates to low quality snap beans, peas, and

other vegetables that make up a considerable proportion of this year's civilian supply. Factors contributing to this situation are: (a) the relatively large supply of low grade vegetables packed as a result of the shortage of labor in the fields and canneries which has led to less careful handling of the raw product than is customary, and (b) the fact that War Food Order 22.6 specifies that Government requirements for most canned vegetable items shall be supplied only from the top grades. As a result, a large part of the canned vegetable pack that remains for commercial distribution consists of the lower grades. However, under the prevailing high level of income, consumers have a definite preference for the better grades of these products. Thus, considerable difficulty may be expected in disposing of standard and substandard grades even when the total supply of canned vegetables is considerably less than the demand.

The civilian requirement for canned vegetables from the 1945 pack has been indicated at 145 million cases, which is 24 million cases or 14 percent less than the estimated demand. This provides a substantial margin for absorbing any possible releases from Government stocks resulting from downward adjustments of noncivilian requirements. It is estimated that if noncivilian procurement were to be reduced to a level approximating 75 percent of the quantity initially recommended for allocation to noncivilian claimants, it would just about make possible the fulfillment of the total indicated civilian demand.

FROZEN VEGETABLES

Consumption in Recent Years

The civilian consumption of frozen vegetables has doubled during recent years. Consumption increased from an average of about 78 million pounds for the period 1937-39 to approximately 176 million pounds in 1944 (table 59). In contrast to canned vegetables the civilian supply of frozen vegetables has increased during the last 2 years. However, to maintain the proper perspective it is important to point out that the per capita supplies of frozen vegetables (1.4 pounds) available to civilians in 1944 amounted to about 5 percent of those of canned vegetables (31 pounds).

Because demand exceeded supply, frozen vegetables were placed under rationing at the same time as canned foods (March 1943). However, they were removed from rationing in April 1944 to facilitate rapid out-of-storage movement when freezer space for meats and other perishable products became inadequate.

Under War Food Order 111, frozen fruits and vegetables may not be held in public freezer space for a longer period than 10 months nor may the over-all occupancy by frozen fruits and vegetables exceed the inventories existing October 1, 1943. These restrictions will tend to hold civilian supplies to about the levels prevailing in 1943-44, except insofar as more rapid turnover results in a larger permissible volume.

Green and yellow: The most important frozen vegetables in this group from the standpoint of volume are green peas, green beans, and lima beans. Total civilian supply of this group during 1944-45 is estimated at about 149 million pounds (or about 1.2 pounds per capita).

Other vegetables: The civilian supply of this group of frozen vegetables in 1944-45 will be treble that of 1937-39. The most popular item in the group is cut corn.

Frozen baked beans also have been packed in considerable volume since the WPB Conservation Order M-81 restricting the use of tin for processed foods became operative. However, consumer acceptance of frozen baked beans has not been as favorable as the industry had hoped.

Demand and Requirements for 1945

Important considerations in determining the civilian requirement for frozen vegetables for 1945 are limitations placed on freezer space occupancy by WFO 111 and the fact that large scale expansion of refrigeration facilities for handling frozen foods in wholesale and retail establishments during this period is not probable. For these reasons the 1945-46

Table 59 --FROZEN VEGETABLES: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	Apparent Civilian Consumption a/				
	1935-39 b/	1941	1942	1943	1944 c/
	1	2	3	4	5
-----Pounds per capita d/-----					
<u>Green & Yellow</u>					
Asparagus	0.06	0.06	0.04	0.06	0.08
Beans, snap	.06	.07	.07	.15	.13
Beans, lima	.13	.14	.19	.09	.13
Broccoli	.02	.03	.04	.07	.06
Brussels sprouts	.004	.01	.02	.07	.03
Peas	.22	.33	.43	.41	.46
Spinach	.03	.04	.12	.15	.18
Other e/	f/	f/	f/	f/	.08
Total	.524	.68	.91	1.00	1.15
<u>Other</u>					
Cauliflower	.004	.01	.01	.04	.02
Corn, cut	.03	.05	.05	.08	.10
Corn-on-cob	.02	.02	.02	.01	g/
Other minor h/	.02	.04	.07	.11	.09
Total	.074	.12	.15	.24	.21
Grand Total	.60	.80	1.06	1.24	1.36
Frozen baked beans	f/	f/	.05	.12	.15
-----Million pounds d/-----					
<u>Green & Yellow</u>					
Asparagus	7.2	7.5	5.2	8.3	10.1
Beans, snap	7.5	8.8	9.0	18.7	17.5
Beans, lima	17.6	19.5	24.6	11.5	16.4
Broccoli	2.4	3.5	5.6	9.3	7.9
Brussels sprouts	0.5	1.9	3.2	8.8	4.2
Peas	28.7	43.0	55.3	51.7	59.1
Spinach	3.9	4.9	15.0	18.9	23.2
Other e/	f/	f/	f/	f/	10.8
Total	67.8	89.1	117.9	127.2	149.2
<u>Other</u>					
Cauliflower	0.5	1.5	1.7	4.8	2.7
Corn, cut	4.2	6.9	6.0	9.8	13.2
Corn-on-cob	2.5	2.7	2.9	1.5	.4
Other minor h/	2.7	4.9	8.5	14.6	10.9
Total	9.9	16.0	19.1	30.7	27.2
Grand Total	77.7	105.1	137.0	157.9	176.4
Frozen baked beans	f/	f/	7.0	15.0	20.0

a/ Pack year basis. b/ 1937-39 average; data earlier years not available.
c/ Preliminary estimate. d/ Frozen weight. e/ Includes such items as frozen carrots, collards, kale, pumpkin, squash, and turnip greens.
f/ No data available. g/ Less than 0.005 pound. h/ Includes such items as frozen beets, mixed vegetables, and pimientos.

requirements are submitted at a level somewhat lower than the estimated civilian demand.

The aggregate civilian requirement for all frozen vegetables (excluding frozen baked beans) during 1945-46 has been set at 175 million pounds as compared with an estimated usage of about 158 million pounds in 1943-44, a 1944-45 estimated civilian supply of about 176 million pounds and an estimated 1945 demand of 188 million pounds. Expressed in per capita terms, the requirement amounts to 1.3 pounds as compared to a demand of 1.4 pounds (table 60).

Since there is considerable opportunity for substitution among the several items, specific requirements are being submitted only for the five most popular items: peas, lima beans, green beans, spinach, and cut corn.

Green and yellow: The 1945-46 requirement of 148 million pounds of green and yellow comprises more than 85 percent of the total civilian requirement for frozen vegetables. It includes 60 million pounds of peas, 25 million pounds of lima beans, 15 million pounds of green beans, and 15 million pounds of spinach. No specific requirements are included for frozen asparagus, broccoli, and brussels sprouts, and civilians will accept residual supplies of these items provided they total a minimum of 33 million pounds.

Other vegetables: The 1945-46 civilian requirement for frozen vegetables, other than green and yellow has been set at 27 million pounds. This includes a specific requirement of 12 million pounds of cut corn and a general requirement of 15 million pounds to be supplied from cauliflower, corn-on-cob, pumpkin, squash and other minor vegetables. No specific requirement is submitted for frozen baked beans, since unlimited use of glass, together with 45 percent of the 1941 usage of tin and the permitted use of chemically treated blackplate for can ends are likely to result in a sizable pack of canned beans.

Problems of Distribution

No very serious problem of distribution is likely to result if the supply of frozen vegetables for civilian use should fall short of the demand. Shortage would be felt most acutely by institutional users and by high-income families that generally have access to supplies of fresh vegetables. Rationing of frozen vegetables was fairly effective in achieving an equitable distribution of the supply during the time that it was in operation. Once frozen, these commodities must be kept at freezer temperature until they are used. Thus, any surpluses tend to tie up freezer space. However, since the volume of

Table 60 --FROZEN VEGETABLES: Civilian Demand and Requirement for 1945

Item	Per Capita			Aggregate		
	Estimated: Annual supply or:			Estimated: Annual supply or:		
	civilian requirement rate			civilian requirement rate		
	demand	Jan.-	July-	demand	Jan.-	July-
	1945	June a/	Dec. b/	1945	June a/	Dec. b/
	1	2	3	4	5	6
	Pounds <u>c/</u>			Million pounds <u>c/</u>		
<u>Green & Yellow</u>						
Asparagus	0.06	0.08	d/	8.0	10.1	d/
Beans, green	.13	.13	.11	17.0	17.5	15.0
Beans, lima	.23	.13	.19	30.0	16.4	25.0
Broccoli	.07	.06	d/	9.0	7.9	d/
Brussels sprouts	.03	.03	d/	4.0	4.2	d/
Peas	.54	.46	.46	70.0	59.1	60.0
Spinach	.12	.18	.11	16.0	23.2	15.0
Other <u>e/</u>	.06	.08	d/	7.0	10.8	d/
Total	1.24	1.15	1.13	161.0	149.2	148.0
<u>Other</u>						
Cauliflower	.02	.02	d/	2.0	2.7	d/
Corn, cut	.10	.10	.09	13.0	13.2	12.0
Corn-on-cob	.01	f/	d/	1.0	.4	d/
Other minor veg. <u>g/</u>	.08	.09	d/	11.0	10.9	d/
Total	.21	.21	.21	27.0	27.2	27.0
Grand total	1.45	1.36	1.34	188.0	176.4	175.0
Frozen baked beans	.05	.15	h/	7.0	20.0	h/

- a/ Frozen vegetables not allocated in 1944-45; estimated civilian supply baked on R&AC blue sheets dated October 16, 1944.
- b/ Requested 1945-46 allocation from 1945-46 supply.
- c/ Processed weight.
- d/ Will accept residual provided total requirement for group is satisfied.
- e/ Includes such items as frozen carrots, collards, kale, pumpkin, squash, and turnip greens.
- f/ Less than 0.005 pound.
- g/ Including such items as frozen beets, mixed vegetables and pimientos.
- h/ Will accept residual supply.

frozen vegetables available for civilian distribution is currently less than 5 percent of that of canned vegetables, no serious surpluses should be encountered during the next year if the price relationships are satisfactory.

The civilian requirement for frozen vegetables has been indicated at about 7 percent less than the estimated civilian demand due principally to the shortage of freezer space. Were it not for the limited storage facilities available and the fact that refrigeration facilities for handling frozen foods in wholesale and retail establishments are limited for the duration a substantially larger volume of frozen vegetables could be marketed without difficulty.

DEHYDRATED VEGETABLES

Consumption in Recent Years

Dehydrated vegetables have never been consumed in large quantity by civilians. Consumption of all dehydrated vegetable products during 1944-45 is expected to approximate 7 million pounds. Total consumption during 1943-44 was near the same level, while only incomplete data are available for previous years. Under the provisions of WFO 30.1, processors are now being required to keep production and disposition records for the seven major items: beets, cabbage, carrots, onions, white potatoes, sweetpotatoes, and rutabagas.

In terms of actual consumption, dehydrated onions and white potatoes are the two most important items for civilians, accounting for an estimated 2.0 and 2.8 million pounds, respectively, during 1943-44. Dehydrated white potatoes are used largely in the production of corned beef hash. Dehydrated onions are used in the manufacturing of tomato catsup, chili sauce, and other processed products. Limited quantities of onion flakes and sweetpotatoes are distributed through retail channels. Minor quantities of carrots, garlic and other vegetables are used indirectly in dry-mix soups, meat products, and other processed foods (table 61).

Demand and Requirements for 1945

Since the use of dehydrated vegetables by U. S. civilians is confined almost wholly to the quantity required for indirect uses, specific requirements are being submitted for only four items: carrots, garlic, onions, and white potatoes. Only a limited demand exists for such items as dehydrated beets, cabbage, celery, rutabagas and sweetpotatoes, and no specific allocation is requested in the case of these products. It is expected of course that some residual supplies will be available.

The civilian requirement for dehydrated garlic is submitted at the demand level of 0.5 million pounds. In the case of dehydrated carrots and white potatoes, the civilian requirements are listed at 1.0 million and 2.5 million pounds, respectively, which is somewhat less than the estimated maximum demand of 1.5 and 3.0 million pounds for these items (table 62). These products are used principally in the preparation of dry-mix soup, corned beef hash, and other processed foods, and a substantial part of the civilian requirement may consist of satisfactory supplies that do not fully meet Government purchase specifications.

Table 61 --DEHYDRATED VEGETABLES: Civilian Per Capita and Aggregate Annual Consumption for Specified Years

Item	Apparent Civilian Consumption a/			
	Per Capita		Aggregate	
	1943	1944	1943	1944
	1	2	3	4
	Pounds b/		Million pounds b/	
Carrots	.01	.01	1.5	1.0
Garlic	c/	c/	.5	.5
Onions	.02	.02	2.0	3.0
White potatoes	.02	.02	2.8	2.5
Other vegetables d/ e/	e/	e/	e/	e/

a/ Preliminary estimate for year beginning July 1; data for previous years incomplete.

b/ Processed weight

c/ Less than 0.005 pound.

d/ Including such items as dehydrated beets, cabbage, celery, greens, tomato flakes and rutabagas.

e/ Quantity indeterminate, based largely on volume of off-grade production.

Table 62 --DEHYDRATED VEGETABLES: Civilian Demand and Requirement
for 1945

Item	Per Capita			Aggregate		
	Estimated:	Annual allocation	Estimated:	Annual allocation	Estimated:	Annual allocation
	civilian	or requirement rate	civilian	or requirement rate	civilian	or requirement rate
	demand	Jan.- : July-	demand	Jan.- : July-	demand	Jan.- : July-
	1945	June a/ : Dec. b/	1945	June a/ : Dec. b/	1945	June a/ : Dec. b/
	1	2	3	4	5	6
	Pounds <u>c/</u>			Million pounds <u>c/</u>		
Carrots	0.01	0.01	0.01	1.5	1.0	1.0
Garlic	<u>d/</u>	<u>d/</u>	<u>d/</u>	.5	.5	.5
Onions	.03	.02	.02	4.0	3.0	3.0
White potatoes	.02	.02	.02	3.0	2.5	2.5
Other vegetables <u>e/</u> <u>f/</u>	<u>f/</u>	<u>f/</u>	<u>f/</u>	<u>f/</u>	<u>f/</u>	<u>f/</u>

a/ Based on 1944-45 allocation from 1944-45 supply (R&AC Yellow Sheets, December 6, 1944).

b/ Requested 1945-46 allocation from 1945-46 supply.

c/ Processed weight.

d/ Less than 0.005 pound.

e/ Including such items as beets, cabbage, celery, greens, tomato flakes, and rutabagas.

f/ No specific requirement, will accept residual.

In view of the heavy noncivilian needs for dehydrated onions, the civilian requirement for this item is placed at 3.0 million pounds, or at 75 percent of the estimated 1945 demand. It should be noted that dehydrated onions are utilized in the manufacture of catsup, chili sauce, and other tomato products which are purchased by the military services and other non-civilian claimants. The supply of dehydrated onions so utilized is included in the civilian allocation.

Except in the case of onions, it is not expected that the civilian demand for dehydrated vegetables during 1945 will be materially greater than the consumption during the past year. As long as vegetables in fresh, canned and frozen forms are obtainable, civilians will probably be slow about increasing their purchases of dehydrated products.

Problems of Distribution

With the possible exception of onions, civilians would not be noticeably affected by a shortage of dehydrated vegetables. Only insofar as these products are essential ingredients of such processed foods as catsup, corned beef hash, and dry-mix soups would a shortage be significant. During the period that set-asides for Government purchase were in effect, essential civilian needs were met by releasing limited quantities for distribution to civilians.

The problem of disposing of possible surpluses is one that merits special emphasis. The quality of most dehydrated vegetables decreases rapidly if they are held for more than 6 months. U. S. civilians are scheduled to receive less than 5 percent of the total allocable supplies for 1944-45. Should the requirements for military and export purposes be decreased suddenly, it could readily lead to a substantial surplus. Even if a special sales promotion program doubled civilian consumption, the net effect on the surplus would be relatively small. The most feasible solution appears to be to curtail production as rapidly as military and export requirements permit. This is particularly desirable in the case of white potatoes, where the prospective supply for fresh use in the January-March quarter of 1945 is especially low.

WHITE POTATOES AND SWEETPOTATOES

(Prepared by Oscar R. LeBeau and W. R. Whitacre)

Significance to the Food Supply

Potatoes are among the most important staples in the American diet and make important contributions to its nutritional adequacy. White potatoes provided approximately nine percent of the ascorbic acid (vitamin C) in the civilian food supply during 1944. They are especially important in low income diets which usually lack sufficient vitamin C. White potatoes are also a relatively inexpensive source of iron, thiamine and niacin. Potatoes provide much of the bulk in low income diets and as such are useful as meat extenders. Palatability, relatively low cost and general availability make white potatoes one of the most important items in the diet of a large part of the population.

Sweetpotatoes are cultivated in more limited areas, but have in general the same merits as white potatoes. In addition, they are an excellent source of vitamin A. Since they are also a very good source of vitamin C, they make almost the same contribution to the diet as green and yellow vegetables.

Consumption in Recent Years

Historically, the trend in per capita consumption of white potatoes has been downward as the consumption of other vegetables has increased. Recently, however, with the rationing of canned vegetables and the high prices of many fresh vegetables, as well as the shortage of other foods, this historical trend has been reversed. Consumption during 1932 for instance was estimated at 142 pounds per capita as compared to an average of about 131 pounds during the period 1935-39 and 118 pounds during 1942.

The record production of 1943 made possible an apparent civilian consumption of about 132 pounds per capita, but at the expense of substantial wastage and special marketing programs. The lower yield from the 1944 late crop and the continued high noncivilian requirements are likely to reduce the 1944-45 civilian supply to a considerably lower level than during the previous year.

The consumption of sweetpotatoes which are relatively less important in terms of volume, has fluctuated between 20 and 31 pounds per capita, farm weight basis, during recent years. Historical consumption data for white potatoes and sweetpotatoes are given in table 63.

Table 63 --WHITE POTATOES AND SWEETPOTATOES: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	Apparent Civilian Consumption a/					
	1932	1935-39	1941	1942	1943	1944 b/
	1	2	3	4	5	6
	- - - - - Pounds per capita c/ - - - - -					
White potatoes	141.8	130.6	124.1	118.3	132.4	111.7
Sweetpotatoes	31.4	23.3	20.6	19.6	22.7	22.3
Total	173.2	153.9	144.7	137.9	155.1	134.0
	- - - - - Million bushels c/ - - - - -					
White potatoes	297.8	283.5	275.4	257.4	285.7	240.8
Sweetpotatoes	72.0	55.1	49.9	46.5	53.3	52.5
Total	369.8	338.6	325.3	303.9	339.0	293.3

a/ Fiscal year basis.

b/ Preliminary.

c/ Farm weight basis. Excludes quantities wasted on farms and sold for starch and seed.

Demand and Requirement for 1945

Demand for white potatoes and sweetpotatoes during 1945 has been estimated at 120 and 21 pounds per capita (farm weight basis), respectively. Demand for potatoes fluctuates little with variations in price, and this tendency has been strengthened due to the reduction in supplies of some staple foods and the high prices of fresh vegetables.

The annual requirement for white potatoes for 1945-46 has been set at the 1945 demand level of 120 pounds per capita, or a total of 262 million bushels. This compares with an estimated civilian availability of about 112 pounds during the fiscal year 1944-45, when as a result of the short 1944 late crop the civilian supply during the winter and early spring months is likely to be considerably short of the demand. The requirement of 120 pounds per capita is based upon present trends in consumption and the assumption of reasonably adequate supplies of other foods. The requirement also assumes a proper and desirable distribution throughout the year as indicated in footnote (d) of table 64. It would be quite possible to have a total production that would provide a far larger per capita share for civilians and have periods of shortage and over-supply. The bulk of the requirement should come from the late crop which can be stored and marketed during the fall and winter months.

The sweetpotato requirement for 1945-46 is placed at the demand level of 21 pounds per capita or an aggregate of 50 million bushels, with a normal quarterly distribution.

Problems of Distribution

The bulk of the white potato crop is produced in the Late Crop States, harvested in the fall, stored and marketed mainly during the months from October through April. The problems of distributing the late crop which can be stored, differ from those of the Early and Intermediate crops which are perishable and can be held only for a short time.

Production conditions vary in different states during a season and there may be an overlapping of harvest seasons particularly in the Early and Intermediate States, resulting in temporary surpluses. These periods of oversupply may be preceded or followed by periods of scarcity, and due to conditions beyond the control of growers it is difficult to plan acreages that will result in the needed production at the time it is required.

The unfavorable weather prevailing in many late potato states during the late summer months of 1944 resulted in lighter yields and a production much smaller than was anticipated. To further complicate the situation, a much larger than normal part of the crop consisted of small potatoes, which are

Table 64 --WHITE POTATOES AND SWEETPOTATOES: Civilian Demand and Requirement for 1945

Item	Per Capita			Aggregate		
	Estimated: Annual allocation			Estimated: Annual allocation		
	civilian :or requirement rate:			civilian :or requirement rate:		
	demand	Jan.- : July-	demand	Jan.- : July-	demand	Jan.- : July-
	: 1945	: June a/ : Dec. b/	: 1945	: June a/ : Dec. b/	: 1945	: June a/ : Dec. b/
	: 1	: 2	: 3	: 4	: 5	: 6
	Pounds c/			Million bushels. c/		
White potatoes	120.0	111.7	120.0	260.0	240.8	261.7 d/
Sweetpotatoes	21.0	22.3	21.0	49.6	52.5	50.0 d/
Total	141.0	134.0	141.0	309.6	293.3	311.7

a/ Based on 1944-45 allocation from 1944-45 supply.

b/ Requested 1945-46 allocation from 1945-46 supply.

c/ Farm weight basis; excludes quantities wasted on farms and sold for starch and seed.

d/ Estimated quarterly requirements for 1945-46:

Quarter	White Potatoes		Sweetpotatoes	
	Percent	Mil. bu.	Percent	Mil. bu.
January-to-March	27	70.7	28	14.0
April-to-June	21	54.9	10	5.0
July-to-September	23	60.2	25	12.5
October-to-December	29	75.9	37	18.5
Total	100	261.7	100	50.0

not readily accepted by consumers. Since consumers depend almost exclusively upon the late crop from about October through April, there are indications of a potato shortage in the first and second quarters of 1945. The severity of the shortage will depend upon the rate at which potatoes are marketed and upon consumer acceptance of small sizes.

The main objective of programs designed to prevent this shortage in the first and second quarter is to distribute the available quantity at a rate which will spread the supply equitably over the entire marketing season. Rationing does not appear to be feasible due mainly to the widely scattered sources of supply and the large number of individual producers.

Mechanisms which might aid in obtaining a better distribution of the available supply are: first, those which would provide an incentive to growers and dealers to hold potatoes until the periods in which scarcity is otherwise most likely to occur; second, voluntary cooperation on the part of the potato industry; and third, government orders definitely restricting the movement of the crop.

Surplus conditions may arise during the early or intermediate crop marketing season of 1945. The difficulty of distributing surplus supplies of white potatoes depends upon the extent of the surplus and its duration. For example, it may be a temporary surplus caused by the over-lapping of the shipping season of several states, or it may be a season-long surplus. The over supply may also be the result of larger than average yield. If the surplus occurs during the early and intermediate season, it is further complicated by the perishability of these crops.

Processing of potatoes through dehydration or canning offers an outlet for sizeable quantities, especially under war conditions but supplies a more limited outlet during peace time. The canning of potatoes has normally been restricted to the early and intermediate crops, but draws heavily upon limited supplies of tin and labor.

The mature late crop potatoes are best adapted to dehydration but the dehydrated product has not met an active demand from consumers and appears to offer only a limited outlet for surplus crops. School lunch and other direct distribution programs, combined with campaigns promoting the consumption of potatoes may aid in relieving surplus conditions.

It is possible that the year of 1945 will see both scarcity and surplus conditions effecting the distribution of white potatoes. It is important to realize that these problems may arise and to prepare plans and programs which will contribute toward their solution.

DRY BEANS AND PEAS
(Prepared by Isabelle M. Kelley)

Significance to the Food Supply

Nutritionally, dry beans and peas can be considered as partial substitutes for meats. The protein supplied are not as efficient as animal protein. However, they furnish certain essential substances not available in cereal proteins and the combination of the two in a low-cost diet is a significant improvement over a diet with cereal proteins only. Thus, these foods make significant contributions to the adequacy of the civilian diet by improving the diets of those groups having low food expenditures, who are least likely of having an adequate diet, largely because of the relatively low consumption of animal protein.

Dry beans are particularly important in the diets of certain groups, such as the Mexicans in the Southwest, and among such groups annual per capita consumption is several times the national average. Quite outside of nutritional considerations, this food is an essential part of their dietary pattern, and they must continue to be able to purchase large quantities if serious repercussions on morale are to be avoided.

Consumption in Recent Years

Civilian consumption of dry beans increased from 9,350,000 bags from the 1932 crop to an average of 11,500,000 from the crops from 1935 to 1939 (table 65). Civilian consumption during the 1941 crop year was equal to the 1935-39 average and increased somewhat during the period when the 1942 crop was consumed. During the 1943 crop year demand for dry beans increased sharply under the impact of shortages in other food items; it is now estimated that at least 11,500,000 bags moved into civilian channels from the 1943 crop, despite the existence of rationing controls. From the 1944 crop civilians will receive approximately 10,700,000 bags. Supplies of white beans will be relatively abundant and pinto beans also should be available in ample supply. Supplies of red kidneys will be exceptionally scarce and small reds and pinks will not be sufficient to satisfy all demands. However, if civilians are willing to consume Pinto beans in larger quantities than current estimates indicate, the total supply of beans out of the 1944 crop for civilians may be larger than 10,700,000 bags.

Table 65.--DRY BEANS and PEAS: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	Apparent civilian consumption a/					
	1932	1935-39	1941	1942	1943	1944
	1	2	3	4	5	6
	Per capita (pounds)					
Dry beans	7.4	8.8	8.7	9.1	8.9	8.3
Dry peas	b/	0.5	0.4	1.2	1.2	1.2
	Aggregate (thousand bags)					
Dry beans	9,358	11,506	11,538	11,841	11,500	10,700
Dry peas	b/	653	577	1,600	1,500	1,500

a/ Crop year basis.

b/ Not available.

Civilian consumption of dry peas has increased sharply during the war period. During the crop years from 1935 through 1941 annual consumption of dry peas was 0.5 pound per capita or less. Civilian consumption from the 1942 and 1943 crops was at more than double the pre-war rate (table 65). During the period covered by the 1944 crop civilian consumption is expected to be maintained at the 1943 level of approximately 1,500,000 bags a year. This appears to be the maximum amount that could be absorbed by the civilian market, as the distribution of dry peas has not been subject to rationing controls since late in 1943. Part of the increased demand has come from the restaurant and hotel trade, which found these items an excellent means of stretching their supplies of high-point rationed items.

Demand and Requirement for 1945

The demand for dry beans and peas during the first 6 months of 1945 is expected to remain close to current levels. On an annual basis the demand during the January-June period is placed at 12,500,000 bags of beans and 1,500,000 bags of peas. During the last 6 months of 1945 the unrestricted civilian demand for these items is expected to decline. The reduction in the level of demand is based upon (1) a decline in the level of national income, (2) a decline in the number of people eating in restaurants, and (3) increased availability of other foods, especially animal protein foods. For the July-December 1945 period, the demand for dry beans on an annual basis is estimated to be 12,000,000 bags; for dry peas, 1,000,000 bags. The demand for dry peas is expected to be considerably above pre-war levels, since it is expected that their increased use in dry soups will continue and that civilians, because of their wartime experience, will continue to eat larger quantities than in pre-war years, even though supplies of other foods increase.

The 1945 requirement for both dry beans and dry peas is placed at the demand level (table 66). The requirement for dry beans by varieties is shown in table 67. Achieving an equitable and effective distribution of a short supply of dry beans and peas is difficult because of the wide differences in annual consumption rates among racial groups and among families at various income levels. Low income groups and certain racial groups annually consume these items in quantities equal to several times the national average, and, in addition, dry beans and peas are an important part of their dietary habits. If supplies are short and distribution controlled it is difficult to insure that supplies available to these groups are maintained at the relatively high levels necessary.

Table 66.--DRY BEANS and DRY PEAS: Civilian Demand and Requirement, 1945

Item	Per Capita		Aggregate	
	Demand	Requirement	Demand	Requirement
	1	2	3	4
	pounds		Thous. bags, cleaned	
Dry beans	9.4	9.4	12,210	12,210
Dry peas	0.9	0.9	1,225	1,225

Table 67.--DRY BEANS and PEAS: Civilian Requirement, by Quarters, 1945

Item	: Aggregate	: Jan.-	: Apr.-	: July	: Oct.-
	: 1	: 2	: 3	: 4	: 5
			</		

Problems of Distribution

Because of the wide differences in consumption patterns for dry beans and peas by regions, by racial groups, and by income classes, it is difficult to achieve a satisfactory distribution of a short supply.

Even if rationing controls are established, these items must carry low ration point values to enable certain groups of consumers to purchase relatively large quantities, and this precludes effective control of a supply which is substantially smaller than the amounts civilians are willing to purchase. Distribution of these items in an adequately-supplied unrationed market will more nearly satisfy special preferences and needs than will any ration system that is administratively feasible.

While the overall supply of legumes is not plentiful in terms of stated requirements, during 1945 dry peas and certain classes of colored beans may be in relative surplus. Whether or not a surplus develops will depend in part upon the ability of UNRRA to move relatively large quantities into civilian relief channels in a relatively short time. If UNRRA needs are not as high as they now estimated or if lack of shipping limits the quantity they can move, stocks of dry peas and these classes of colored beans held by the WFA may be relatively large at the beginning of the 1945 crop year. It will be difficult, even with some type of special distribution program, to move significantly larger quantities of certain classes of colored dry beans or dry peas into civilian consumption channels unless supplies of white beans are sharply lower.

With the improvement in the overall civilian food supply that should accompany the close of one phase of the war, it is expected that the civilian demand for dry beans and peas will decline. Among those who normally consume large quantities of these items there would be little hope of increased consumption since they have always consumed beans at close to the maximum rate. Among those who now consume beans and peas in increased quantities, as substitutes for more desirable items such as meat and canned fish, consumption will decline when larger quantities of animal protein foods are available for civilian use.

NUTS

(Prepared by Isabelle M. Kelley)

Significance to the Food Supply

Peanuts and peanut butter contain significant quantities of protein that is biologically efficient, being comparable in quality with the chief animal proteins. Peanuts are one of our richest sources of niacin, and they also provide substantial quantities of thiamine and fair amounts of riboflavin. Riboflavin and niacin are likely to be inadequate in the average diet and, hence, the addition of peanuts could raise the margin of safety for these nutrients. Peanut butter has been particularly important as it has provided a nutritious spread for bread at a time when butter supplies were substantially below normal levels; and it is the one peanut product which appears to be eaten in relatively large quantities by all consumers regardless of income.

The high fat and protein content of tree nuts ranks them as valuable caloric foods. Tree nuts are also good sources of minerals and thiamine. Where price is not important, tree nuts can be a good source of some nutrients and provide variety to the diet.

Consumption in Recent Years

Consumption of peanuts has been increased during the war period. From the crops of 1935 through 1939 consumption averaged 5.9 pounds per capita and increased to 6.4 pounds per capita from the 1941 crop and 8.8 pounds per capita from the 1942 crop (table 68). The increases in consumption through the period covered by the 1942 crop reflected increased consumption of peanut butter and increased use of peanuts in candy and as salted nuts. Civilian consumption of peanuts from the 1943 and 1944 crop is estimated to be slightly smaller than from the 1942 crop. During 1943 and 1944 military requirements for salted peanuts and peanut candy have been so large that it has not been possible to process the quantity of peanuts civilians wished to consume, because of limitations resulting from shortages of labor and equipment.

Further increases in the consumption of peanut butter are not expected since increased supplies of preserves have tended to retard sales of peanut butter. While civilians could consume many more peanuts in candy and as salted nuts than they did from the 1942 crop, manufacturers have not been able to supply this demand because of large military orders and shortages of labor, containers, and other necessary ingredients. This is especially true in the case of salted nuts where the quantity required by the military is so large it will absorb a significant portion of the productive capacity of several major salters.

Table 68.--MUTS: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	Apparent civilian consumption					
	1932	1935-39	1941	1942	1943	1944
	1	2	3	4	5	6
----- Per capita (pounds) -----						
Peanuts <u>a/</u>	5.9	6.4	6.6	8.8	8.5	8.5
Tree nuts <u>b/</u>	1.1	1.3	1.2	0.8	1.1	1.2
----- Aggregate (Million pounds) -----						
Peanuts <u>a/</u>	743.6	833.0	882.5	1150.0	1100.0	1100.0
Tree nuts <u>b/</u>	140.0	164.0	162.0	109.0	130.0	155.0

a/ Farmers' stock basis. Estimates refer to crop year beginning in October of year shown.

b/ Shelled basis. Estimates refer to crop year beginning in year shown. Includes, almonds, filberts, pecans, walnuts, Brazil nuts, cashews, and chestnuts.

The per capita consumption of tree nuts appears to have been relatively stable at about 1.0 pound of shelled nuts per capita until our imports of tree nuts were reduced during the war period. In 1944-45, however, estimates indicate that the supply of tree nuts will be larger than in 1942-43 or 1943-44, because of an improvement in the import picture and good prospects for domestic production of tree nuts, especially walnuts and pecans.

Demand and Requirement for 1945

To meet military requirements, a substantial portion of the production of Virginia and Spanish type peanuts available in 1945 will be set-aside for noncivilian use. While Runner type peanuts will be available in reasonably adequate supply, this type does not produce a salted nut acceptable to the general public. Until military requirements are reduced below their present level, most salters probably will find their production for civilians limited by the lack of suitable peanuts. Despite an expected decline in national income which will affect the demand for candy and salted nuts, it is estimated that the edible peanut trade will be able to use as many peanuts for civilian production in 1945 as in 1944 (table 69). Currently, the edible trade would consume more peanuts if it were possible to meet the present demand for candy and salted nuts. With a brighter picture for labor, containers, etc., in 1945, manufacturers should be able to increase their sales of these products in the civilian market, despite the expected decline in national income. Increased use of peanuts in candy and as salted nuts will be counterbalanced by some decline in the

demand for peanut butter and a greater use of tree nuts in salting operations.

Table 69.--NUTS: Civilian Demand and Requirement, 1945

Item	Per capita		Aggregate	
	: Require-		: Require-	
	: Demand	: ment	: Demand	: ment
	: 1	: 2	: 3	: 4
	- - - pounds		- - mil. lbs.	
Peanuts, farmers' stock	8.5	8.5	1,100.0	1,100.0 a/
Tree nuts, shelled b/	1.4	1.3	176.0	168.0

a/ The requirement by quarters is as follows: Jan.-March, 264.0; April-June, 220.0; July-Sept., 242.0; Oct.-Dec., 347.0.

b/ Includes walnuts, almonds, pecans, filberts, chestnuts, and Brazil nuts.

The civilian requirement for peanuts, as shown in table 69, is placed at the level that will meet the effective demand of the edible trade in 1945. The requirement by quarters is based largely upon the pattern of movement of cleaned and shelled peanuts from mills to edible users in 1942. The large peanut crops in recent years have accentuated the movement of peanuts in the October-December period, as peanut mills in the Southeast do not have storage capacity for keeping peanuts on hand after harvest. This quarterly requirement does not correspond to the seasonal pattern of consumption.

It is estimated that the civilian demand for tree nuts in 1945 as a whole will be lower than in 1944 because of the prospective decline in the level of national income in the latter half of the year. Demand, however, is expected to be higher than in the pre-war period, since the increase in level of consumer incomes has more than counterbalanced the increase in prices that has occurred.

The civilian requirement for tree nuts totals 168 million pounds, shelled basis, (table 69). This should provide for a reasonably equitable distribution of the supply available for civilian use.

Problems of Distribution

As long as military requirements for edible peanuts remain at relatively high levels and the demand for peanut oil is good, there should be little difficulty in disposing of the peanuts produced. However, after these two demands decline, our supply of peanuts may be well in excess of demand, especially since, by law, the price of peanuts must be supported at a high level

after the war. It will be impossible for the edible trade to absorb the quantity of peanuts now produced, and particularly since the greatest increase in production has been in the Runner type. Runner type peanuts can be used in the production of peanut butter (but Virginia and Spanish types are preferred); they are not suited for salting purposes; they can be used in candy bars. A decline in the national income will have an adverse effect upon the demand for salted nuts and candy, and demand for peanut butter will be difficult to increase over current levels, because it is expected in that event butter will be more plentiful.

In the case of tree nuts, it will be difficult to maintain relatively high prices and still move large quantities into civilian consumption channels, once the level of national income declines.

DRY-MIX AND DEHYDRATED SOUPS
(Prepared by Oscar R. LeBeau)

Significance to the Food Supply

Dry-mix and dehydrated soups are bought primarily as convenience foods and as a substitute for canned soups. Their nutritional significance is largely the same as that of the chief ingredients --cereals, legumes, and vegetables.

Consumption in Recent Years

Civilian consumption of dry-mix and dehydrated soups has been estimated at 48 million pounds during 1943-44, the first year for which reasonably reliable data are available. This estimate is based on information furnished the WFA by the dry soup industry and by private surveys. Considerably more would have been available for the civilian market if consumer acceptance had been greater. While only a few manufacturers had earlier experience in producing dry-mix soups, scores of firms have entered the industry during the past 2 years with the hope of finding a large domestic and export market for a new product. Under these conditions, a considerable proportion of the production has not been of top quality, and consumer acceptance both at home and abroad has been generally disappointing. A considerable volume of that which was distributed to the retail trade moved so slowly that it grew stale on the shelves. The more progressive companies have had the foresight to relieve their distributors of old stocks in exchange for a continuous supply of fresh. However, some firms have neglected to take this precaution, and many of the smaller ones have quit the industry entirely. Under these circumstances, it is assumed that the quantity actually consumed by civilians was somewhat less than the quantity shipped to distributors during 1943-44. It is currently estimated that civilian consumption during 1944-45 is not likely to exceed a total of 50 million pounds or about 6 ounces per capita.

For the purpose of this discussion dry soups may be grouped as (a) dry-mix, (b) dehydrated, and (c) miscellaneous.

Dry-mix soups: The most important of the dry soups from both the quantitative and the nutritional point of view are the dry-mix types, which fall into three subdivisions according to the commodities predominately used in their manufacture (table 70).

The group of dry-mix soups predominating in cereals consists largely of chicken noodle soup, although it also includes some beef noodle and other noodle combinations. It is estimated that from 75 to 80 percent of the dry soups currently marketed to civilians consists of the cereal-mix type.

Table 70 --DRY-MIX AND DEHYDRATED SOUPS: Civilian Per Capita and Aggregate Annual Consumption for Specified Years a/

	Per Capita		Aggregate	
	Apparent Civilian Consumption b/			
Item	1943	1944	1943	1944
	1	2	3	4
	Pounds c/		Million pounds c/	
<u>Dry-mix Soups</u>				
Predominating in cereals d/	0.23	0.30	38.0	39.0
Predominating in legumes e/	.04	.04	4.3	5.0
Predominating in vegetables	.04	.04	4.7	5.0
Dehydrated soups f/	g/	g/	.5	.5
All other (mushroom, dried stew, etc.)	g/	g/	.5	.5
Total	.36	.38	43.0	50.0

a/ Year beginning July 1.

b/ Preliminary estimate; data for previous years incomplete.

c/ Processed weight.

d/ Principally chicken noodle soup.

e/ Principally beans, peas, and soybeans.

f/ Condensed from fresh vegetable and other types of soups.

g/ Less than 0.005 pound.

The group predominating in legumes is composed largely of soups manufactured from dry peas, beans, and soybeans. From the nutritional point of view, this is the most significant of all types of dry and dehydrated soups. It also offers one of the best opportunities for increasing consumption of dry peas and soybeans which are relatively abundant. Roughly, 10 percent of the dry soups sold to civilians is of this type.

The group of dry-mix soups predominating in vegetables is ordinarily made from a mixture of dehydrated vegetables, with or without a soybean base. Dehydrated carrots, one of the dehydrated vegetables available in largest quantities, form the base of most of the vegetable-mix soups. Other ingredients are onions, white potatoes, and the minor dehydrated vegetables. About 10 percent of the dry soups bought by civilians is of this type.

Dehydrated soups: The second group of dry soups is the type made from fresh vegetables and other products which are combined into a liquid soup and then dehydrated as a mixture. Only limited quantities of this type have been produced up to this time, and it is estimated that current annual consumption approximates only 0.5 million pounds, or about 1 percent of the civilian purchases. Experiments are now being conducted which, if successful, may lead to an expanded use of this type of dehydrated soup in the feeding of infants and invalids.

Miscellaneous dry-mix soups: A third group of dry soups is made up of a number of miscellaneous types such as dried mushroom soup, dried stew and similar combinations. Consumption of these soups is currently estimated at 0.5 million pounds, or one percent of the total annual sales to civilians.

Demand and Requirement for 1945

The civilian demand for dry-mix and dehydrated soups during 1945 is estimated at 50 million pounds. This is based on the assumption that the general quality of these products will have improved and that many of the less satisfactory packs will have been removed from retailers' shelves by that time.

In view of the foregoing considerations, the 1945-46 civilian requirement for dry-mix and dehydrated soups has been set at 50 million pounds, or at about 6 ounces per capita. This is sufficient to maintain the level of distribution indicated for 1944-45, and in view of the generally favorable supply of fresh foods, it is doubtful whether consumption is likely to expand markedly this next year.

It is suggested that this requirement be distributed among the several types of soups in the same pattern as indicated for the 1944-45 civilian consumption. These details are reflected in table 71.

To implement the above requirement, it is important that adequate supplies of dehydrated onions and garlic be available for flavoring purposes. Requirements for that purpose have been indicated in the section on dehydrated vegetables:

Problems of Distribution

Supplies during the coming year will be ample to satisfy all civilian requirements. In fact, the War Food Administration has included dry-mix soups in its list of plentiful foods since the spring of 1944. One of the chief problems is to maintain a constantly fresh supply on retail shelves since dry-mix soups have a limited shelf-life. Thus, it is important to turn over stocks within reasonable time limits and that packages be of a size that will permit the contents to be consumed without delay once they have been opened.

Since the normal civilian consumption has never been large and efforts to expand the civilian market have not been too successful, the disposition of Government owned stocks at the end of the war may offer a real problem. One of the reasons why dry soups have not found better acceptance in this country is that the total food supply situation has been sufficiently favorable to make replacement unnecessary. This same condition probably will affect the consumption of dry-mix soups after the war.

Table 71 -- DRY-MIX AND DEHYDRATED SOUPS: Civilian Demand and Requirement a/

Item	Per Capita			Aggregate		
	: Estimated:	Annual allocation		: Estimated:	Annual allocation	
	: civilian	or requirement rate		: civilian	or requirement rate	
	: demand	: Jan.-	: July-	: demand	: Jan.-	: July-
	: 1945	: June b/	: Dec. c/	: 1945	: June b/	: Dec. c/
	1	2	3	4	5	6
	Pounds d/			Million pounds d/		
<u>Dry-mix soups</u>						
Predominating in cereals e/	0.30	0.30	0.30	50.0	39.0	39.0
Predominating in legumes f/	.04	.04	.04	5.0	5.0	5.0
Predominating in vegetables	.04	.04	.04	5.0	5.0	5.0
Dehydrated soups g/	h/	h/	h/	.5	.5	.5
Other soups (mushroom, dried stew, etc.)	h/	h/	h/	5	.5	.5
Total	.38	.38	.38	50.0	50.0	50.0

a/ Year beginning January 1.

b/ Based upon 1944-45 supply (Dehydrated Vegetables - R&AC yellow sheets, December 6, 1944).

c/ Requested supply 1945-46.

d/ Processed weight

e/ Principally chicken noodle soup.

f/ Principally beans, peas, and soybeans.

g/ Condensed from fresh vegetable and other types of soups.

h/ Less than 0.005 pound

COFFEE, TEA, COCOA
(Prepared by Isabelle N. Kelley)

Significance to the Food Supply

Coffee and tea make no contribution to the nutritional adequacy of the civilian diet, with the possible exception of niacin in coffee; any nutritive value cocoa may have is thought to be negligible. However, these three commodities play a significant role in terms of food habits and have a definite place in the family menu, and hence are highly important from the point of view of national morale.

Consumption in Recent Years

Coffee: Consumption of coffee has been rising steadily over the past decade, increasing from 11.9 pounds per capita in 1932 to 15.5 pounds in 1941 (table 72). Due to short supplies after the United States entered the war and the institution of rationing late in 1942, civilian consumption fell back to 13.4 pounds in that year and continued at the 13-pound level in 1943, despite removal of rationing restrictions in the latter part of 1943.

Table 72.--COFFEE, TEA, COCOA: Civilian Per Capita and Aggregate Annual Consumption for Specified Periods

Item	: Apparent civilian consumption					
	: 1932	: 1935-39	: 1941	: 1942	: 1943	: 1944
	: 1	: 2	: 3	: 4	: 5	: 6
	- - - - - Per capita (pounds) - - - - -					
Coffee, green	11.9	14.0	15.5	13.4	13.1	16.5
Tea	0.8	0.7	0.8	0.5	0.5	0.6
Cocoa beans	3.2	4.4	4.8	3.8	2.9	3.4
	- - - - - Aggregate (million pounds) - - - - -					
Coffee, green	1,486	1,814	2,060	1,777	1,692	2,136
Tea	100	87	104	70	60	72
Cocoa beans	399	569	637	504	370	446

In the fall of 1944 when it appeared that the close of the European phase of the war grew nearer, and with it the possibility of the re-opening of a coffee-hungry market, our importers experienced more and more difficulty in buying coffee in South America at prices consistent with our ceilings. However, our stocks of coffee were at relatively high levels in the summer of 1944 and this, together with 3 million bags of coffee made available by the Brazilian Government in the last quarter of the year, guaranteed adequate supplies for 1944.

Tea: From 1932 through 1941, the annual civilian per capita consumption of tea remained fairly stable, fluctuating around 0.7 and 0.8 pound. This dropped to 0.5 pound in 1942 and 1943 because of shortages caused by import restrictions (table 72). It is estimated that the free market demand during 1945 will be about equal to consumption in 1941. Part of this demand, however, is for types of tea not now available in the domestic market. While black tea has been substituted for green or other type of teas by many consumers, other consumers have been unwilling to shift their purchases to black tea and have remained out of the tea market pending the return of their favorite teas. There is little prospect that green tea will be imported in any quantity in 1945.

Cocoa: The consumption of cocoa amounted to 3.2 pounds per capita in 1932 but rose to 4.8 pounds in 1941 (table 72). This increase in consumption reflects, in large part, the increase in the sale of chocolate confections accompanying the increase in consumer incomes. The reduction in consumption in 1942 and 1943 was the result of restricted supplies owing to the import situation rather than any decline in demand. With an improvement in imports in 1944 more cocoa was made available for civilian use. During the first 6 months of 1944 grindings were permitted at 80 percent of 1941 use, compared with 60 percent in the corresponding period in 1943. However, imports were not as great as expected, and it was necessary to reduce the level of permitted grindings to 70 percent of 1941 use in the last 6 months of 1944.

Demand and Requirement for 1945

For the year as a whole, the civilian demand for coffee and cocoa will remain above normal pre-war levels, despite the expected decline in national income and a probable decrease in the proportion of the working population engaged in strenuous industrial activity. The per capita demand for tea, which appears to be relatively stable is estimated to be equal to per capita consumption in 1941.

Coffee: It is estimated that in 1945 demand for coffee will total 2,100 million pounds, approximately equal to consumption in 1944. (table 73). The civilian requirement for coffee is placed at the demand level, due to its importance in food habits and the desirability of maintaining a sufficient supply that the restoration of rationing controls will not be necessary.

Table 73.--COFFEE, TEA, COCOA: Civilian Demand and Requirement, 1945

Item	Per capita		Aggregate	
	Require-		Require-	
	Demand	ment	Demand	ment
	1	2	3	4
	Pounds		Mil. lbs.	
Coffee, green	16.2	16.2	2,100.0	2,100.0
Tea	0.8	0.7	105.0	86.4
Cocoa beans	5.1	4.3	660.0	553.0

Tea: The per capita demand for tea is estimated to be 0.8 pound per capita in 1945. However, part of this demand is for green and other type tea which probably will not be available in 1945. The civilian requirement for black tea is placed at 86.4 million pounds, or 0.7 pound per capita (table 73). This will permit close to normal pre-war quantities of black tea and should result in reasonably adequate supplies in all markets and satisfy a substantial proportion of the demand for black tea.

Cocoa: The civilian requirement for cocoa requests an increase over current levels of permitted grindings under WFO 25. For the first half of the year, an amount equal to 80 percent of 1941 use is requested; for the last half, 90 percent of 1941 use (table 73). The requirement by quarters, as shown in table 74, is based upon reported quarterly use under the order. This level of supply will not meet the demand for chocolate products, but processors will still be limited in their production for civilians by shortages of labor, shortages of sugar, and a continuation of relatively larger military requirements.

Table 74.--COFFEE, TEA, COCOA: Civilian Requirements by Quarters, 1945

Item	Jan.-	Apr.-	July	Oct.-
	Mar.	June	Sept.	Dec.
	1	2	3	4
	Million pounds			
Coffee, green	580.0	512.0	464.0	544.0
Tea, black	26.0	24.5	19.1	16.8
Cocoa beans	126.0	137.0	145.0	145.0

Problems of Distribution

Coffee: To provide civilians with the quantity of coffee requested in 1945, a solution must be had for the problem of higher-than-ceiling prices in producing countries. Stocks of coffee on

January 1, 1945 probably will be equal to a 3-month supply, but these must be supplemented by regular imports if we are to avoid distribution difficulties in 1945.

Tea: Although the supply of tea for U. S. civilians will not be definitely known until after the international allocation of the 1945 tea crop, it appears that supplies would be sufficient to permit the increase requested. However, shipping available for the importation of tea might be a limiting factor.

Cocoa: Restrictions on the grindings of a short supply of cocoa beans have resulted in reasonably equitable distribution without resort to the rationing of the end products. Shortages of chocolate candy have been constant but appear to have no serious morale repercussions. The industry has managed to keep somewhat adequate supplies flowing to war plants and the general public appears to be fairly well supplied. Beverage cocoa is generally available but baking chocolate is about as scarce as chocolate confections.

To provide civilians with 90 percent of 1941 use in the last half of 1945 will be possible only if there is a significant decline in military purchases. If approximately one-half of the 5-cent candy bars produced are set aside for the military, as is currently done under WFO 115, supplies of cocoa would not be sufficient to permit such an increase to civilians nor would confectionery manufacturers have the production facilities to absorb such an increase in civilian supplies of cocoa, even if available.

SPICES
(Prepared by Isabelle M. Kelley)

Significance to the Food Supply

Spices, particularly those most commonly used, give flavor and palatability to otherwise mild foods of monotonous flavor. Since our diet has been based upon more cereals and has provided less of the preferred grades and cuts of meat during the war period than heretofore, it has been important to supply sufficient spices to produce taste appeal in these dishes. Equally important are the essential industrial uses of spices in the processing and preserving of our food supply, such as in meat packing, canning and pickling, and in bakery products.

Consumption in Recent Years

The normal pre-war annual aggregate consumption of the various spices has been estimated as follows:

	<u>Thousand pounds</u>
Pepper (black and white)	32,000
Pimento	1,800
Cinnamon and cassia	10,200
Cloves	3,000
Ginger	3,000
Mace	850
Nutmeg	4,500

In 1941 the consumption of these spices generally was higher than normal, but in 1942 the reduction in imports and restricted use under the conservation order reduced civilian supplies below pre-war levels. In 1943 the consumption of spices such as mace, pimento, and cloves increased as the flow of imports improved. In early 1944 it was possible to remove all restrictions on the use of pimento and cloves. Imports of cloves during 1944 have not been as great as expected but it appears possible to continue uncontrolled distribution.

The distribution of pepper to civilians has been sharply lower than pre-war use as efforts were made to stretch our stockpile of pepper because only negligible imports will be available until after the close of the Pacific phase of the war.

Although WFO 19 permits civilian supplies of pepper at a rate equal to 40 percent of 1941 use, civilians did not receive this amount during 1944. Many grinders did not have sufficient stocks to permit them to distribute up to the maximum permitted

under the order, and they were not able to buy additional supplies from importers who were withholding pepper from the market during negotiations with OPA for an adjustment in ceiling prices. Because of this, distribution of pepper has been unsatisfactory; during 1944 shortages have developed, especially in certain Southern areas during the period when the bulk of the home curing of meats was done. In addition, meat packers and oatsup manufacturers had difficulty in securing adequate and continuous supplies. However, the increase in the price ceiling for Lampong black pepper, effective as of October 9, 1944, is expected to result in a freer movement of pepper.

Demand and Requirement for 1945

The demand for all spices, with the possible exception of mace, is at levels above normal pre-war consumption. Restrictions on the distribution of mace appears to have lessened the demand for it. The increase in the overall demand for spices comes primarily from industrial users, such as meat packers, canners, and bakers. The increase in the volume of food preserving done in the home and the relatively larger supplies of the less preferred cuts of meat also have resulted in an increase in the demand for these items.

The requirement for spices (table 75) contemplates the continuation of current levels of permitted use, except for mace. For mace the requirement requests a quantity sufficient to remove this item from the controls over distribution established under WFO 19. The continuation of uncontrolled distribution of pimento and cloves and the addition of mace to this group, combined with current levels of permitted use for other items, will make available reasonably adequate supplies of spices.

Table 75.--SPICES: Civilian Requirement, 1945

Item	1945 Civilian requirement
	Aggregate
- - - - -Thousand pounds - - - -	
Pepper (black and white)	15,136
Pimento (allspice)	2,400
Cinnamon and cassia	4,058
Cloves	5,000
Ginger	3,700
Mace	850
Nutmeg	4,556

Problems of Distribution

With the exception of pepper and possibly cinnamon, no serious distribution problems with spices should be encountered in 1945. Although pepper is moving to grinders with the increase in the ceiling price, we are still faced with the problems of stretching our supply of pepper. Based upon the current rate of use, our stock of pepper is scheduled to last until the beginning of 1946. If it is decided that our stocks should last for a longer period, a problem will be faced in reducing further the already low level of civilian supplies. Industrial users now are receiving what must be considered the minimum amount. Therefore, if civilian supplies were to be reduced some method must be devised to give preferential treatment to industrial users.

YEAST FOR FOOD USE
(Prepared by Isabelle F. Kelley)

Significance to the Food Supply

Adequate quantities of active yeast are essential to the national food program since the program is based upon continuously making available abundant supplies of cereal products. Active yeast is used as a leavening agent for bread and other yeast-dough products, and any shortage of yeast for this purpose could not be tolerated.

Significant quantities of the B vitamins, particularly riboflavin, can be added to the diet by the incorporation of nutritional yeast in such foods as dry soups. This use may prove to be of increasing importance in improving the vitamin content of low-cost diets. The small quantity of nutritional yeast now used in food fortification does not yet affect significantly the overall adequacy of the civilian diet. However, new food uses of nutritional yeast are being explored continually, and insufficient supplies should not be the limiting factor in encouraging the increased use of nutritional yeast for food fortification purposes.

Consumption in Recent Years

Active yeast: In the years immediately preceding the beginning of the war it is estimated that the baking industry used about 180 or 190 million pounds of compressed yeast annually, and that household sales were in the neighborhood of 20 million pounds. In addition, the domestic market absorbed between 1 and 2 million pounds of dry active yeast, including both compressed yeast in dry form and yeast-cereal products. During 1943, estimates indicate that close to 220 million pounds of compressed active yeast was used by the baking industry and in home baking. Until November 1943 the only dry active yeast available to civilians was the yeast-cereal type. During November and December 1943 small quantities of dry active yeast (grown on molasses) were released to civilians. Estimates indicate that in 1944 domestic sales of compressed yeast were at approximately the 1943 level; some quantities of dry active yeast also were available.

Nutritional yeast: Data as to the consumption of nutritional (dried inactive) yeast in foods are not available prior to 1942. In 1942, it is estimated that 950,000 pounds of nutritional yeast were used in foods. The main uses are as a vitamin carrier and as a flavoring agent. The addition of nutritional yeast to dehydrated soups and stews will fortify these products with the B vitamins and will improve their flavor. In its tasteless form, nutritional yeast is added to

baby foods and sandwich spreads to fortify their vitamin value; smoked brewers' yeast, which has a bacon-like flavor, is used in powdered form for food fortification and for seasoning both in food manufacturing plants and in the home. In 1943 the food use of nutritional yeast increased to an estimated 1.6 million pounds, under the impact of the publicity given to it as a substitute for other foods in short supply and its use in food fortification. It is estimated that its use in 1944 was slightly higher than in 1943.

Demand and Requirement for 1945

Active yeast: It is estimated that in 1945 the demand for compressed yeast for use in the home and by the baking industry will be at approximately the 1944 level. This demand is based on the continuance of the present rate of consumption of bread and other yeast-dough products. Increased consumption of bread and other yeast-dough products has not called for a comparable increase in yeast use, as the same quantity of yeast may be used in leavening larger quantities of dough when production increases. The demand for dry active yeast appears to be relatively stable and would fall between 1.5 and 2.0 million pounds for the year 1945. This yeast is used by people who do not have access to regular supplies of compressed yeast, and in recent years it has been replacing compressed yeast to some extent. It would be expected that when larger supplies of dry active yeast are available for civilian use, it will replace compressed yeast to an increasing extent, since it is less expensive to distribute and easier to keep.

The civilian requirement for compressed yeast is placed at 220 million pounds for the calendar year 1945, as shown in table 76. This is sufficient to meet all demands for yeast by the baking industry and for home use. This quantity is necessary to insure the continued consumption of cereal products by providing adequate supplies of leavening agents. The requirement for dry active yeast remains on a residual basis. WFO 112 permits a limited quantity of dry active yeast to be distributed in the civilian market and, through this mechanism, the level of civilian supplies may be easily adjusted upward, if changes in the war situation permit.

Table 76.--YEAST FOR FOOD USE: Civilian Requirement, 1945

Item	1945 civilian requirement	
	:	Aggregate
- - - - - Million pounds - - - - -		
Compressed yeast		220.0
Dry active yeast		a/
Nutritional yeast		2.0

a/ Will accept residual supply.

Nutritional yeast: The demand for nutritional yeast for food use in 1945 will continue to reflect the trend toward higher consumption, especially with the prospective increases in the civilian consumption of dehydrated soups and stews. It is estimated that the civilian demand will be approximately 2.0 million pounds.

The civilian requirement for nutritional yeast for food use, as shown in table 76, is placed at 2 million pounds, allowing a 25 percent increase over the quantity available to civilians in 1943. This requirement, by requesting that increased quantities be made available in order to encourage its use in foods, follows the National Research Council's recommendation.

Problems of Distribution

There appears to be little likelihood of distribution problems in yeast in 1945. Facilities for the production of dry active yeast have expanded rapidly during the war period to meet large military and lend-lease requirements for an active yeast that did not require constant refrigeration to retain its leavening power. However, once these facilities are released from war production, it appears that the domestic and commercial export markets will readily absorb most of the quantity produced.

PECTIN FOR FOOD USE
(Prepared by Isabelle L. Kelley)

Significance to the Food Supply

Pectin is an essential ingredient in commercially produced preserves, in many home produced preserves, and in products such as salad dressings and many types of confections. Pectin should be available in sufficient volume to prevent its becoming a limiting factor in the production of any of these items for civilian use.

Consumption in Recent Years

Based on data from the Census of Manufacturers, use of pectin in 1939 totaled 2,800,000 pounds. In 1941 and 1942 civilian supplies were estimated at approximately 3,200,000 pounds, and for the year beginning July 1943 civilians were allocated 3,400,000 pounds of pectin. Considerable difficulty was encountered in equitably distributing this supply, since it was considerably below requirements due to the substantial increase in the production of commercial preserves. During the 1944 fiscal year civilians are expected to receive 3,925,000 pounds of pectin for food uses and this should provide a fully adequate supply for both household and commercial use.

Demand and Requirement for 1945

It is estimated that the demand for pectin for food use will be less in 1945 than in 1944 because of an expected decline in the production of preserves. However, preserve production is expected to be above pre-war levels, and this will keep the demand for pectin at a relatively high level. It is estimated that the demand for pectin for food use in 1945 will be approximately 3,700,000 pounds.

The requirement is based upon the need to provide reasonably equitable distribution of the supply and to prevent inadequate supplies of pectin from limiting the production of items in which it is used. With this in view and mindful of the practical difficulties of controlled distribution, the requirement is placed at the demand level. It appears that the total domestic production of pectin is adequate to supply civilians with this quantity.

The civilian requirement totals 3,696,000 pounds and its estimated distribution among various types of users is shown in table 77.

Table 77.--PECTIN FOR FOOD USE: Civilian Requirement, 1945

Item	:	1945 civilian requirement
	:	Aggregate
	- - -	Thousand pounds - - -
Commercial preserves		2,096
Household use		1,100
Other, excluding pharmacy		500
Total		3,696

Problems of Distribution

There appears to be no difficulty in providing civilians with the quantity of pectin requested even if noncivilian requirements remain close to current levels. If noncivilian requirements decline, there appears to be no real threat of a surplus, since production can be adjusted to the level demanded in the market.

FERMENTED AND DISTILLED VINEGAR
(Prepared by Oscar R. LeBeau)

Significance to the Food Supply

Vinegar is important as a preservative and as a flavoring. Large amounts are used for home canning and for table purposes while in addition vast quantities are utilized each year in the production of pickles, catsup, salad dressing and other commercially processed foods. The pickle industry alone uses at least 10 million gallons of 100-grain distilled vinegar annually.

Vinegar is also in demand as a flavoring agent and as such it makes possible greater variety in meal preparation. It is an aid in utilizing left-overs and hence contributes to food conservation.

Farm and village families use larger quantities of vinegar than do urban families, owing principally to the greater volume of home preservation of foods by rural families. In general, cider vinegar is the type most often purchased for home use, except in the South where some 40-grain white distilled vinegar is used.

Consumption in Recent Years

Most of the vinegar used in this country is either cider vinegar made from apples or white distilled vinegar made from alcohol, molasses or grain. Demand for both types has been above normal during the last two years, due to increased quantities required for home canning and for the manufacture of processed foods. The favorable market for other apple products has reduced the proportion of the apple crop that has gone into cider vinegar, while distilled vinegar production has been subject to wartime restrictions on alcohol and molasses. This has tended to deplete the usually large stocks of vinegar with the result that inventories are below normal.

Historical data concerning the annual production and disappearance of vinegar are incomplete. However, it is possible to make a general estimate of the civilian consumption for recent years from information submitted by the trade, from data contained in the 1939 United States Census of Manufacturers, and unpublished reports of the War Production Board and the Bureau of Internal Revenue. Data from these sources substantiate the estimates of consumption presented in table 78.

In discussing vinegar consumption, it is important to treat (a) cider vinegar, (b) wine vinegar, and (c) distilled vinegar, separately. Fruit vinegars have an average potency of about 50-grains and undiluted distilled vinegar is usually reported in terms of 100-grain strength.

Table 78 --FERMENTED AND DISTILLED VINEGAR: Civilian Per Capita and Aggregate Annual Consumption for Specified Years a/

Item	:Estimated: :average : Apparent Civilian Consumption b/ :strength : 1940 : 1941 : 1942 : 1943 : 1944 c/ : 1 : 1 : 2 : 3 : 4 : 5					
	Grains d/			Pounds per capita e/		
Cider vinegar	50	4.0	3.9	3.7	2.3	3.0
Wine vinegar	50	f/	f/	f/	f/	f/
Distilled vinegar	100	3.2	3.0	3.6	4.1	3.9
Total equivalent <u>g/</u>	50	10.4	9.9	10.9	10.5	10.8
- - - - - Aggregate million gallons - - - - -						
Cider vinegar	50	60.9	59.9	56.8	35.0	45.0
Wine vinegar	50	.2	.2	.2	.2	.2
Distilled vinegar	100	50.0	46.7	54.7	62.5	60.0
Total equivalent <u>g/</u>	50	161.1	153.5	166.4	160.2	165.2

a/ Year beginning October 1.

b/ Based on information obtained from the trade, the Bureau of the Census, the Bureau of Internal Revenue, and the War Production Board.

c/ Preliminary estimate.

d/ Fifty-grain vinegar is that which contains 5 percent acetic acid or 50 grains per 100 cubic centimeters at 20° C.

e/ Computed on the basis of 8.5 pounds per gallon.

f/ Less than 0.05 pound.

g/ Derived by counting one unit of 100-grain distilled vinegar as equivalent to two units of 50-grain cider vinegar.

Cider vinegar: The 1939 Census of Manufacturers and information from the trade indicate that the average annual pre-war consumption of commercially produced cider vinegar approximated 60 million gallons of 50-grain strength. An indeterminate additional quantity of home-made vinegar is produced and consumed in millions of rural homes.

The production of commercial cider vinegar has declined slightly during recent years due principally to the favorable demand for fresh apples, fresh cider, apple juice, and other apple products. However, the civilian demand for apple-flavored vinegar has not diminished proportionately. In fact, trade estimates indicate that cider vinegar demand was from 25 to 50 percent higher than normal during the last two summers, due mainly to the larger quantities desired for home canning.

Wine vinegar: Wine has never been an important source of vinegar in the United States, 205,000 gallons in 1942-43 being the highest production reported to the Bureau of Internal Revenue in any one year. The reported production in 1943-44 amounted to only 157,000 gallons. Because other grape products offer higher returns, the production of wine vinegar--a product generally made from "diseased" wine--will probably continue to be negligible.

White distilled vinegar: The higher concentration of 100-grain distilled vinegar makes it a more potent preservative and enables it to be stored and transported more economically than 50-grain cider vinegar. Production of this type of vinegar has been limited since the beginning of the war by the quantities of alcohol, grain, and molasses available for this purpose. WPB Conservation Orders M-30 and M-54 initially restricted the use of alcohol and molasses, respectively, for vinegar production to 110 percent of the base-year (1940-41) usage. To compensate partially for the shortage of cider vinegar, Order M-30 was amended October 23, 1943 to permit 130 percent of the base-year usage of molasses for vinegar production, and increased quantities of alcohol are available upon special application by alcohol-using vinegar plants. Grain use is not restricted by Government, but supplies have been stringent until this year.

Civilian consumption of white distilled vinegar approximated 50 million 100-grain gallons during the base-year 1940-41. The demand for this type of vinegar has fluctuated in accordance with the needs of food industries and the supply of cider vinegar available. Because of the large quantities of distilled vinegar utilized in the production of such products as catsup, salad dressing, and pickles, of which the military services require large amounts, it is difficult to estimate accurately the annual civilian consumption.

However, governmental and trade statistics indicate that during 1942-43 and 1943-44 approximately 54.7 and 62.5 million gallons, respectively, of 100-grain distilled vinegar entered civilian channels. Planned production in 1944-45 is aimed at supplying about 60 million gallons of distilled vinegar for civilian use.

Normally, most of the distilled vinegar produced is used for industrial food purposes and much of it is never diluted. However, to facilitate comparison and to permit totalling it is helpful to consider the respective quantities of all vinegars in terms of equivalent 50-grain gallons. Computed in this manner, civilians consumption of all vinegar has amounted roughly to an equivalent of between 155 to 165 million gallons of 50-grain strength annually for the last five years, (table 78).

Demand and Requirements for 1945

On the basis of past consumption, it is reasonable to assume that the civilian market would absorb in 1945 approximately 55 million gallons of cider vinegar, 0.2 million gallons of wine vinegar, and 55 million gallons of distilled vinegar, making a total estimated demand equivalent to 165 million gallons of 50-grain potency. However, the production of cider vinegar from the 1944 apple crop is expected to be about 10 million 50-grain gallons short of providing this amount for civilians. To overcome this deficit in cider vinegar, it is planned that distilled vinegar production will be stepped up correspondingly. However, by the 1945-46 season, increased cider vinegar production may make it possible to return more nearly to the normal consumption pattern. Thus, the civilian requirement for that period contemplates satisfying all but 5 million gallons of the estimated demand for cider vinegar, while the requirements for the wine and distilled types are submitted at the demand level, (table 79).

Altogether, the civilian requirement for 1945-46 has been set at 160 million 50-grain gallons or at about 97 percent of the estimated demand of 165 million gallons. Since 50 million gallons of cider vinegar represents the maximum quantity that can be expected from the 1945 apple crop, it means that about 55 million gallons of distilled vinegar (of 100-grain strength) will be required to fulfil the remaining vinegar requirements. Some of this will be needed for meal preparation and table use but the major part will reach the consumer indirectly through processed foods such as pickles, salad dressing and catsup.

It is calculated that with a reasonable degree of economy and with the continuation of voluntary rationing by the industry, the above requirement will provide a sufficient supply to meet most civilian needs.

Table 79 --FERMENTED AND DISTILLED VINEGAR: Civilian Demand and Requirement for 1945 a/

Item	Per Capita			Aggregate		
	:Estimated:Annual supply or:			Estimated:Annual supply or:		
	civilian :requirement rate:			civilian :requirement rate:		
	:demand :Jan.- : Oct.-			:demand :Jan.- : Oct.-		
	:1945 :Sept. b/ Dec. c/			:1945 :Sept. b/ Dec. c/		
	: 1	: 2	: 3	: 4	: 5	: 6
	- - Pounds - -			- - Million Gallons - -		
Cider vinegar <u>d/</u>	3.6	3.0	3.2	55.0	45.0	50.0
Wine vinegar <u>d/</u>	<u>e/</u>	<u>e/</u>	<u>e/</u>	.2	.2	.2
Distilled vinegar <u>f/</u>	3.6	3.9	3.6	55.0	60.0	55.0
Total equivalent <u>g/</u>	10.8	10.8	10.4	165.2	165.2	160.2

- a/ Year beginning October 1.
b/ Based on 1944-45 production program.
c/ Requested 1945-46 civilian supply.
d/ Assuming average strength of 50-grains.
e/ Less than 0.05 pound.
f/ Assuming strength of 100-grains.
g/ Derived by counting one unit of 100-grain distilled vinegar as equivalent to two units of 50-grain cider vinegar.

Problems of Distribution

Cider vinegar is produced commercially on a large scale in this country by approximately 100 firms. In addition, each of the thousands of custom cider mills and small domestic cider presses is a potential source of vinegar for many families. Thus, a considerable proportion of the supply of cider vinegar is used near the areas in which it is produced. Distilled vinegar production on the other hand is more centralized. Moreover, its greater concentration enables it to be transported more economically.

Despite the generally tight supply of vinegar during the past two years, the vinegar industry has been able through voluntary rationing and the expanded use of consumer size packages to maintain satisfactory distribution to both household and industrial users. With the continued assistance of the Government in obtaining reasonably adequate production no special difficulty is anticipated in meeting essential needs for the coming year. Distilled vinegar can readily be substituted for cider vinegar to a sufficient extent to compensate for short supplies of the latter.

No surplus of either cider or distilled vinegar is anticipated for 1945 as demand is good and stocks are low. Considerable production will be required to replenish normal inventories which are frequently equivalent to a whole year's sales.

VITAMINS

(Prepared by Marion B. Matlack)

Ascorbic Acid

The Food and Nutrition Board of the National Research Council recommends as nutritionally desirable the addition of ascorbic acid to special infant foods with a milk base. Experiments have shown this addition to be feasible. We are, therefore, submitting a requirement for a sufficient quantity of ascorbic acid to meet this need.

Thiamine, Riboflavin, and Niacin

The requirements for thiamine, riboflavin, and niacin are based on the amounts needed to enrich white bread, white rolls, and buns, as required by War Food Order 1, Amendment 1, and other cereal enrichment consisting of flour, farina, and breakfast foods carried out on a voluntary basis. Vitamins for the preparation of the concentrates used by the mills and for the tablets used by bakers for enrichment must be available at all times. Considerable amounts of thiamine and niacin also are used to fortify breakfast cereals; and the enrichment of corn products, such as corn grits and corn meal, is increasing. There are also some minor uses such as in certain special dietary foods.

On the basis of the needs presented above, the requirements for ascorbic acid, thiamine, riboflavin, and niacin for civilian food uses, by quarters, for the calendar year 1945 are shown in table 80.

Table 80.--SYNTHETIC VITAMINS: Civilian Aggregate Annual Requirement for Food Enrichment for 1945, by Quarters

Item	:	:	Jan.-	:	Apr.-	:	July-	:	Oct.-	
	:	Total	:	Mar.	:	June	:	Sept.	:	Dec.
	:	1	:	2	:	3	:	4	:	5
----- (Kilograms) -----										
Ascorbic acid		7,500		1,500		2,000		2,000		2,000
Thiamine		37,900		9,400		9,500		9,500		9,500
Riboflavin		22,300		5,500		5,600		5,600		5,600
Niacin		270,000		66,000		68,000		68,000		68,000

Vitamin A

Vitamin A is used for the fortification of margarine and, to a limited extent, in a group of miscellaneous foods.

Due to the shortage of butter, fortification of margarine is more essential than ever before, and it is important that requirements for this purpose be met in full. Standards set by the Federal Security Agency require that when margarine is fortified it contain a minimum of 9,000 U.S.P. units per pound. In order to allow for processing and storage loss and variability of biological assay, manufacturers report use ranging from 10,000 to 13,500 U.S.P. units per pound of margarine. The requirements are based on providing a sufficient quantity of vitamin A to enable the enrichment of all margarine at an average rate of 11,500 U.S.P. units per pound.

Civilian requirements for vitamin A for enrichment of foods other than margarine are based on 100 percent of average 1943 usage.

The civilian vitamin A requirement for food enrichment during the calendar year 1945 is shown in table 81.

Table 81.--VITAMIN A: Civilian Aggregate Annual Requirement for Food Enrichment for 1945, by Quarters

Item	:	:	:	:	:	:
	: Total	: Jan.-	: Apr.-	: July-	: Oct.-	
	: 1	: Mar.	: June	: Sept.	: Dec.	
	:	:	:	:	:	:
	-	-	-	-	-	-
	-(Billion U.S.P. units)					
Margarine	7,475	2,025	1,725	1,725	2,000	
Other foods	2,788	697	697	697	697	
Total	10,263	2,722	2,422	2,422	2,697	

NUTRITIVE EVALUATION a/
(Prepared by Charlotte Chatfield and Kathryn A. Morrison)

Requirements

The requirements submitted for 1945, although similar in most food groups to previous consumption, show an increase in dairy products and somewhat smaller quantities of tomatoes and citrus, green and yellow vegetables, and meat (table 82). The higher level of milk is most desirable and marks a trend in the right direction, for many diets are deficient in calcium and riboflavin, nutrients that are found in relatively large amounts in milk. b/

The criterion of adequacy of the requirements is the National Research Council Recommended Dietary Allowances. If the requirements submitted were realized, the nutritive values indicate that the average civilian diet, as shown in table 82, would be sufficient in calories, protein, and vitamin A, but would allow little, if any, margin for calcium, vitamin C, and the B-vitamins, especially riboflavin and niacin. If enrichment can be extended to a greater proportion of the flour, or to other cereal products, the status with respect to the B-vitamins would be improved.

The nutritive value calculations used are only a measure of the average diet and fail to indicate the relative adequacy of the diet at the various levels of income. Whenever the average diet has no margin to make up deficits in the diets of groups at lower income levels, it is clear that a large proportion of the population will be underfed because of inequalities in consumption; many in the higher income groups consume more than the National Research Council Recommended Dietary Allowances.

The submitted requirements are only slightly above the recommendations in some of the most essential nutrients, and these margins are too small to allow for maldistribution, i.e., to provide enough to cover all segments of the population and all seasons of the year. The number who will get a satisfactory diet will depend, of course, on success in achieving equitable distribution and on the degree to which individuals and families make good selections and adapt themselves to whatever shortages and shifts in supply occur.

Recommended Food Allowances

The goal of a food program is to make available the kinds and quantities of food that would make the fullest contribution toward the optimum health and efficiency of the population. Under war conditions such a program cannot be attained completely because of shortages in some of the important food groups. To indicate the direction of such a program, and give perspective on the requirements, Recommended Food Allowances for 1945 have been developed, as shown in tables 82 and 83.

a/ For explanation of the terms and the methods used in preparing the tables see Methodology, appendix p.180.

b/ See table 84 for distribution of nutrients by food groups.

Table 82.- Estimated Per Capita Civilian Supplies of the Major Food Groups for Specific Periods, Requirements and Recommended Food Allowances for 1945

Pounds per capita per year - retail weight

Year	Milk : equiv- alent : a/	Pota- toes : sweet- : pota- toes :	Dry : beans : peas : & nuts	Toma- toes : & : citrus : fruits :	Green : & : yellow : vegs.	Other : fruits : & : vege- tables :	Eggs : poultry : & fish : b/	Meat : e/	Grains : :	Fats : & : oils : c/	Sugars : & : syrups
1932 supply	417	142	11.8	65	82	d/	37.7	e/	210	66	103
1935-39 "	437	127	14.1	84	90	212	36.1	132	200	64	106
1941 "	468	120	14.4	97	92	226	37.7	147	197	70	113
1942 "	491	114	16.7	98	104	207	37.7	146	202	66	103
1943 "	516	129	17.6	101	105	185	41.2	150	207	67	97
1944 "	522	111	17.9	103	109	207	41.7	151	209	67	101
1945 require- ments	540	113	18.1	99	101	211	40.2	144	206	66	102
1945 recommended food allow- ances f/	572	126	20.4	134	119	244	43.3	187	206	75	123

a/ Milk equivalent - milk-solids-not-fat, excludes butter.

b/ Excludes bacon and salt pork.

c/ Includes butter, bacon, and salt pork.

d/ No estimate for apples available -- total other than apples is 157 pounds.

e/ No fish figures available -- total for meat and poultry equals 125 pounds.

f/ These allowances need to be revised upward to be adequate if levels of flour and bread enrichment should be lowered.

Table 83.- Estimated Nutritive Value of Civilian Food Supply for Specified Periods, Requirements for 1945, and Recommended Food Allowances for 1945, Expressed as Daily Quantities of Nutrients Per Capita ^{a/}

Year and basis :	Energy : value :	Protein : gm :	Fat : gm :	Carbohydrate : gm :	Calories : mg :	Phosphorus : mg :	Iron : mg :	Vitamin A : min I.U. :	Thiamine : mg :	Riboflavin : mg :	Niacin : mg :	Vitamin C : min mg :
1932 supply	3040	84	123	400	800	1350	11	7200	1.17	1.68	11.4	68
1935-39 "	3025	83	122	399	840	1350	11	7300	1.11	1.70	11.3	74
1941 "	3179	88	133	409	890	1450	12b/	7600	1.31b/	1.82b/	12.3b/	77
1942 "	3114	89	130	400	930	1450	13c/	7700	1.41c/	1.87c/	12.7c/	79
1943 "	3155	93	132	400	970	1550	14d/	8500	1.60d/	2.04d/	13.7d/	83
1944 "	3183	94	132	405	980	1560	15d/	8000	1.66d/	2.27d/	15.5d/	86
1945 requirements	3177	93	132	404	1010	1560	15e/	8000	1.62e/	2.27e/	15.0e/	84
1945 recommended food allow- ances ^{f/}	3547	103	152	443	1080	1730	17f/	9400	1.81f/	2.49f/	17.3f/	103
NRC recommended dietary allow- ances ^{g/}	2730	66			900		12	4700	1.50	2.20	15.0	70

- a/ Allowances for edible waste were adapted from published estimates of William Kling, 1943. Rough estimates of cooking losses have been applied to the values for thiamine, riboflavin, niacin, and vitamin C.
- b/ Assumes 28 percent enrichment of white flour and bread.
- c/ Assumes 50 percent enrichment of white flour and bread.
- d/ Assumes 65 percent enrichment of white flour and bread.
- e/ Computations on the assumption that 1944 levels of enrichment of flour and bread, e.g., 65 percent maintained through 1945. If flour and bread were not enriched, the values would be substantially lower, as follows: iron, 12 mg, thiamine, 1.26 mg, riboflavin, 2.01 mg, and niacin, 12.3 mg.
- f/ These levels would be reached by means of the food allowances in table 82 if 1944 enrichment levels continue through 1945; if they should be lowered, greater quantities of food would be needed to provide the levels of nutrients indicated here.
- g/ Weighted for composition of the civilian population. These allowances are on an actual intake basis.

Table 84.- Percentages of Nutrients Provided by Food Groups in Civilian Food Supply for 1944 and Requirements for 1945

Nutrient	Year	Dairy : a/ : b/	Pota- toes : sweet- peas : toes :	Dry : beans : peas : & mts :	Toma- toes : & : citrus : fruits :	Green : & : yellow : vegs. :	Other : fruits : & : vege- : tables :	Eggs : poultry : & fish : b/	Meat : poultry : & fish : b/	Grains : oils : b/	Fats : & : oils : b/	Sugars : & : syrups
Energy value	1945	14.2	3.2	3.1	1.2	.9	4.1	2.2	10.4	26.7	19.2	14.8
	1944	13.7	3.2	2.9	1.2	1.0	4.0	2.2	11.0	27.0	19.0	14.8
Protein	1945	25.1	2.5	5.8	.9	1.7	2.5	6.1	25.7	28.0	1.7	0
	1944	24.0	2.5	5.2	1.0	1.8	2.4	6.2	27.1	27.9	1.9	0
Calcium	1945	77.4	1.4	2.9	1.5	3.2	4.6	2.4	1.5	4.1	.4	.6
	1944	76.5	1.4	2.5	1.7	3.5	4.8	2.5	1.7	4.3	.4	.7
Iron	1945	2.4	5.4	10.8	3.1	5.3	7.7	8.0	23.4	31.2	1.7	1.0
	1944	2.1	5.4	9.1	3.1	5.3	7.5	8.2	24.9	31.3	1.9	1.2
Vitamin A	1945	14.0	15.3	.1	7.1	32.6	7.7	5.4	10.3	c/	7.5	c/
	1944	13.4	15.4	.1	7.2	32.4	7.6	5.6	11.7	c/	6.6	c/
Thiamine	1945	13.0	5.0	6.8	3.7	2.6	4.6	3.8	20.1	36.3	4.0	.1
	1944	12.6	4.8	5.8	3.8	2.7	4.5	3.8	21.7	35.9	4.4	c/
Riboflavin	1945	53.2	1.8	2.5	1.4	1.8	3.2	7.2	12.2	15.5	1.0	.2
	1944	51.9	1.8	2.2	1.5	1.8	3.2	7.5	13.3	15.7	1.0	.1
Niacin	1945	4.2	7.1	7.4	3.0	1.8	3.7	.2	36.9	32.9	2.6	.2
	1944	4.0	6.8	7.0	2.9	1.8	3.4	.2	38.7	32.1	3.0	.1
Vitamin C	1945	7.1	11.9	0	34.5	18.9	25.6	0	1.9	0	0	.1
	1944	6.8	11.4	0	35.8	19.5	24.4	0	2.1	0	0	c/

a/ 1945 figures refer to the submitted requirements; 1944 to the supply.

b/ See footnotes a/ through c/, table 82.

c/ Less than 0.05 percent.